SOUTH CAROLINA
BEHAVIORAL RISK FACTOR SURVEY

1990

CENTER FOR HEALTH PROMOTION
SOUTH CAROLINA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL CONTROL

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EXECUTIVE SUMMARY

The South Carolina State Department of Health and Environmental Control has participated in the Behavioral Risk Factor Surveillance System (BRFSS) of the Centers for Disease Control (CDC) since 1984. The BRFSS is a nationwide effort coordinated by CDC to gather data on health risk behaviors through monthly telephone interviews with randomly selected adult residents of participating states. The health risk behaviors surveyed are major contributors to illness, disability, and premature death.

In 1990, interviews were completed with 2,239 South Carolinians aged 18 and over. The following are highlights of the 1990 Behavioral Risk Factor Survey (BRFS) results.

Cigarette Smoking: Overall, 25% of South Carolina's adults reported that they currently smoke cigarettes. While 64% had, at some time, made a serious attempt to quit smoking, only 25% had stopped for a week or more during the previous year. A total of 57% of smokers who had ever smoked successfully quit.

South Carolina's 1990 smoking prevalence was well above the Year 2000 Health Objective of reducing smoking prevalence to no more than 15% of adults.

Hypertension: The prevalence of hypertension in South Carolina in 1990 was 18%. This prevalence, however, is only for persons who are aware that they are hypertensive; it excludes an undetermined number of individuals who have hypertension but are not aware of it. Therefore, the true prevalence of hypertension may be higher than the 1990 BRFS results indicate.

Progress toward achievement of the Year 2000 Health Objectives related to hypertension could not be measured using BRFS data. Other data suggest that, as of 1987, 35% of South Carolina adults with hypertension had their blood pressure under control. This percentage falls short of the Year 2000 objective of 50%.

High Blood Cholesterol: One third (33%) of the BRFS respondents reported that they had never had their cholesterol checked, while nearly two thirds reported having had it checked within the past 5 years. The overall prevalence of high blood cholesterol was 15%. This prevalence, however, is only for persons who are aware that they have high cholesterol; it excludes an undetermined number of individuals who have high cholesterol but are not aware of it. Therefore, the true prevalence of high blood cholesterol may be higher than the 1990 BRFS results indicate.

Since the prevalence of high cholesterol in South Carolina excludes persons who have it but are not aware of it, progress toward achievement of the Year 2000 Health Objective could not be measured using BRFS data. South Carolina falls 15% short of achieving the related objective of increasing the proportion of adults who have had their cholesterol checked within the preceding 5 years to at least 75%.

Sedentary Life-Style: Over two thirds (69%) of adults in South Carolina reported a sedentary life-style. Of the adults who reported that they exercise, the most-frequently engaged in exercise for both men and women was walking. The second most popular form of exercise for men was running; for women, it was aerobics.

The Year 2000 Health Objective is to reduce sedentary lifestyles to no more than 15 percent of people aged 6 and older. While the age groups are not comparable, South Carolina's 1990 prevalence substantially exceeds this objective.

Overweight: The overall prevalence of overweight in 1990 was 25%. Over half of the overweight adults in the survey reported that they were trying to lose weight. Eating fewer calories combined with increased physical activity was the most popular method of trying to lose weight.

South Carolina's 1990 overweight prevalence of 25% is higher than the Year 2000 Health Objective of 20%; however, the age groups are not comparable.

Dietary Fat Intake: Based on categorization of respondents according to their consumption levels of fat (low, medium, or high), 56% of 1990 BRFS respondents were at risk for higher-than-recommended dietary fat intake. Only 17% were categorized as low fat consumers.

Progress toward the Year 2000 Health Objective of reducing dietary fat intake to an average of 30% or less and average saturated fat intake to less than 10% of calories among people aged 2 and older cannot be measured using BRFS data.

Fruit and Vegetable Intake: About one third of the 1990 BRFS respondents reported eating fewer than 3 servings of fruits and vegetables daily; another 41% reported eating 3-4 servings; and 20% reported eating 5 or more servings. Overall, 75% were eating fewer than 5 daily servings of fruits and vegetables.

South Carolina falls far below the Year 2000 Health Objective of increasing complex carbohydrate and fiber-containing foods in the diets of all adults to 5 or more daily servings of vegetables and fruits, with only 20% of adults eating 5 or more servings in 1990.

Seat Belt Non-Use: Seat belt non-use was reported by 14% of South Carolina's adult population.

South Carolina met the Year 2000 Health Objective of increasing use of occupant protection systems to at least 85% of motor vehicle occupants in 1990 (86% prevalence).

Chronic Drinking: In 1990, 5% of South Carolina males reported chronic drinking compared to less than 1% of females, for an overall 1990 prevalence of 3%.

Progress toward achievement of the Year 2000 Health Objective cannot be measured using BRFS data.

Breast Cancer Screening: Over 90% of female respondents reported that they had had a breast physical exam at least once, and over three fourths had had an exam within the preceding year. Nearly half of the respondents had had at least one mammogram; two thirds had been screened within the preceding year. Of the 54% who had never had a mammogram, the most important reason given by a majority of respondents was that it was not recommended by a doctor.

Overall, 62% of 1990 BRFS respondents aged 40 and older had had both a physical breast exam and a mammogram. This is 20% below the Year 2000 Health Objective of 80%. Similarly, 54% of respondents aged 50 and older had received both a clinical breast examination and a mammogram within the preceding 1 to 2 years, which is about 25% below the Year 2000 objective of 60%.

Cervical Cancer Screening: Overall 94% of female respondents reported that they had had a Pap test at least once, and 72% had had the test within the preceding year.

South Carolina is within 1% of achieving the Year 2000 Health Objective which calls for 95% of women aged 18 and older to have had a Pap test.

Table 1
NUMBER AND PERCENT OF ADULT SOUTH CAROLINIANS AT INCREASED RISK FOR MORBIDITY AND MORTALITY FROM VARIOUS BEHAVIORAL RISK FACTORS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Risk Factor	Estimated Number	Percent
Cigarette Smoking[1]	641,624	25
Hypertension[2]	461,969	18
High Blood Cholesterol		
Lack of Cholesterol Screening[3]	846,944	33
High Cholesterol[4]	256,393	15
Sedentary Life-Style[5]	1,770,882	69
Overweight[6]	641,624	25
Dietary Fat Intake[7]	1,437,238	56
Fruit and Vegetable Intake[8]	1,924,872	75
Seat Belt Non-Use[9]	359,309	14
Chronic Drinking[10]	76,995	3
Breast Cancer Screening		
Lack of Breast Physical Exam[11]	727,381	7
Lack of Mammogram[12]	94,290	54
Cervical Cancer Screening		
Lack of Pap Test[13]	80,820	6

[1] Ever smoked at least 100 cigarettes and currently smoke.

[2] Told blood pressure is high and/or currently taking medication to control hypertension.

[3] Never had cholesterol checked.

[4] Had cholesterol checked and been told, at least once, that it was high.

[5] No physical exercise or exercise less than 3 times a week for less than 20 minutes per session.

[6] Females: Body Mass Index of ≥27.3%; Males: Body Mass Index of ≥27.8%.

[7] Categorized as medium or high fat consumer.

[8] Eat fewer than 5 servings of fruits and vegetables daily.

[9] Sometimes, seldom, or never use seat belts when driving or riding in a car.

[10] 60 or more drinks during the past month.

[11] Never had a breast physical exam.

[12] Never had a mammogram.

[13] Never had a Pap test.

INTRODUCTION

Behavioral Risk Factor Surveillance System

Organization of Survey Results

Statistical Significance

Glossary of Symbols, Abbreviations, and Definitions

<: Less than
≥: Equal to or greater than

BRFS: Behavioral Risk Factor Survey
BRFSS: Behavioral Risk Factor Surveillance System
CDC: Centers for Disease Control

Chronic (Disease): Refers to a health-related state (disease) lasting a long time. The U.S. National Center for Health Statistics defines a "chronic" condition as one of 3 months' duration or longer.

Morbidity: Illness; sickness.

Mortality: Death.

Prevalence: The percentage of survey respondents who reported the behavioral risk factor of interest. The percentage is calculated using survey data which have been weighted to reflect the age, race, and sex distribution of the state's population. Weighted data compensate for sampling bias and provide more representative population-based estimates of risk factor prevalence among South Carolina adults.

Risk Factor: An aspect of personal behavior or life-style, or an inborn or inherited characteristic, which on the basis of epidemiological evidence is known to be associated with health problems.

Statistical Significance: Statistical methods allow an estimate to be made of the probability that an association exists between a demographic variable and a risk factor. In this report, a finding of statistical significance indicates that, with 95% confidence, there is an association between a demographic variable and the risk factor tested. For variables not found to be statistically significant, prevalence differences may be due to chance alone.

Chronic diseases have replaced infectious diseases as the major causes of morbidity and mortality in South Carolina. As shown in Table 1, the ten leading causes of death accounted for over 80% of all deaths in the state in 1990.

Table 2
LEADING CAUSES OF DEATH IN SOUTH CAROLINA, 1990
(RESIDENCE DATA)

Rank	Cause of Death	Total Number	Percent of Total
1	Diseases of the Heart	9,317	31.5
2	Malignant Neoplasms	6,774	22.9
3	Cerebrovascular Diseases	2,413	8.1
4	Accidents	1,655	5.6
5	Chronic Obstructive Pulmonary Disease & Allied Conditions	1,040	3.5
6	Pneumonia & Influenza	817	2.8
7	Diabetes Mellitus	725	2.4
8	Suicide	431	1.5
9	Homicide & Legal Intervention	427	1.4
10	Conditions Originating in Perinatal Period	363	1.2
	Ten Leading Causes Subtotal	**23,962**	**80.9**
	All Other Causes Subtotal	**5,659**	**19.1**
	ALL CAUSES TOTAL	**29,621**	**100.0**

Risk factors which are major contributors to illness, disability and premature death among South Carolinians include cigarette smoking, hypertension, high blood cholesterol, physical inactivity, overweight, poor nutrition, failure to use seat belts, alcohol abuse, and failure to practice preventive health by making use of screening procedures for high cholesterol, breast cancer (mammography), and cervical cancer (Pap tests).

Many of the major contributors to chronic disease are related to personal behaviors, health choices, and life-styles which can be modified to reduce the risks of illness, disability, and premature death. In order to plan, implement, and evaluate programs to reduce these risk factors, the patterns and trends of the health behaviors of South Carolinians must be monitored.

Behavioral Risk Factor Surveillance System (BRFSS)

In 1984, South Carolina began participating in the Behavioral Risk Factor Surveillance System coordinated by the U.S. Centers for Disease Control (CDC). The purpose of the BRFSS is to determine the prevalence of major behavioral risk factors among adults (18 years of age and older) by monitoring their personal health habits through an ongoing telephone survey. Data collected from the survey provide a basis and direction for health promotion efforts designed to prevent disease and encourage positive health habits. As of 1990, 44 states and the District of Columbia were participating in the BRFSS.

This report presents the results of the 1990 South Carolina Behavioral Risk Factor Survey (BRFS). The analysis is based on data gathered on the following risk factors covered in the set of core questions in the survey: Cigarette Smoking, Hypertension, High Blood Cholesterol, Sedentary Life-Style, Overweight, Dietary Fat Intake, Fruit and Vegetable Intake, Seat Belt Non-Use, Chronic Drinking, Breast Cancer Screening (Breast Physical

Exams and Mammography), and Cervical Cancer Screening (Pap Tests).

Organization of Survey Results

For each risk factor, summary information on the risk factor's relationship to chronic disease and/or death is given. A summary of the 1990 survey results is presented, followed by an assessment of South Carolina's progress toward achieving the Year 2000 Health Objectives associated with the risk factors.

Data are presented by various demographic characteristics. It should be stressed that the prevalence data reported for demographic variables reflect the percentages of total persons within the group--not in the total survey sample--participating in a specific health behavior. This method of reporting prevalence facilitates identification of at risk populations for health promotion efforts.

The racial categories used in CDC-prepared data analyses were White, Black, Hispanic, and Other. Since persons of Other races represent a very small portion of South Carolina's total population, they were added to the Black racial category. The racial categories used in this report are White and Nonwhite, regardless of ethnic origin.

Statistical Significance

A chi-square test of statistical significance was performed (on unweighted data) to determine if there was an association between demographic variables and a particular risk factor within two-way tables. A finding of statistical significance indicates that, with 95% confidence, there is an association between the demographic variable and the risk factor tested. This means that the prevalence differences among the demographic variables are probably not due to chance alone. Variables that were found to be statistically significant are highlighted.

For variables that were **not** found to be statistically significant, prevalence differences observed may be due simply to chance, or there may have been insufficient statistical power to detect significant differences. Tables with small sample sizes in particular should be interpreted cautiously because it is possible that with an increase in sample size, the differences may be statistically significant.

Several tables in this report present a number of response variables as well as demographic variables. In these instances, the cross-tabulations produced cell sizes too small to test for statistical significance. Information is presented on the data in these tables for descriptive purposes only.

METHODOLOGY

Sample Selection
Respondent Selection and Interviews
Response Rates
Accuracy of Data
Characteristics of the Sample Population
Limitations

Glossary of Symbols, Abbreviations, and Definitions

BRFS: Behavioral Risk Factor Survey
CASRO: Council of American Survey Research Organizations
CATI: Computer-Assisted Telephone Interviewing
CDC: Centers for Disease Control

Confidence Level: A measure of the degree of confidence (expressed as a percentage) with which the data reflect the true population prevalence. A 95% confidence level means that the true population prevalence would be obtained 95% of the time if repeated sampling of the population were performed.

Prevalence: The percentage of survey respondents who reported the behavioral risk factor of interest. The percentage is calculated using survey data which have been weighted to reflect the age, race, and sex distribution of the state's population. Weighted data compensate for sampling bias and provide more representative population-based estimates of risk factor prevalence among South Carolina adults.

Response Rate: The number of completed telephone interviews divided by the total number of persons who would have been surveyed if all persons called had participated. The response rate is expressed as a percentage.

Weighted Data: Data which have been adjusted by means of weighting factors to make the population sample surveyed representative of the total state population.

The Behavioral Risk Factor Surveillance System uses a standardized core questionnaire and interview protocol. The questions are developed by CDC, with input from the participating states. The core questions have been selected from national surveys, such as the National Health and Nutrition Examination Survey and the National Health Interview Survey. States with interests in subject areas not covered by the core questionnaire may add questions to the survey.

The standardized survey instrument is used to assess the prevalence of personal health practices and behaviors related to the leading causes of death. The survey poses questions about seat belts; hypertension; exercise; tobacco use; alcohol consumption; weight control practices; intake of dietary fat, fruits, and vegetables; and the use of preventive services such as cholesterol screening, mammograms, and Pap tests.

Sample Selection

The sample for the survey is selected by means of a multi-stage cluster design based on the Waksberg Sampling Method[1] for random digit dialing. This methodology incorporates telephone numbers, listed and unlisted, and, basically, makes all adults with a residential telephone eligible participants. (As of December 1990, 92.8% of South Carolina residences had at least one telephone). The first two stages of the three-stage cluster design involve random selection of telephone numbers. The third stage involves random selection of an adult within the household.

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[1] Waksberg, JS: Methods for random digit dialing. J Am Stat Assoc 73:40-46, 1978.

The total sample is proportionally distributed among the three-digit exchange codes in the state. Then, within each three-digit exchange, an appropriate set of usable telephone numbers is randomly selected and the sample numbers are obtained by adding a random value. When a number does not result in a completed call, another number is randomly selected by the computer.

Respondent Selection and Interviews

Standard procedures are used to identify an adult to be interviewed from the adults living in the selected household. Eligible respondents are defined as persons 18 years of age or older. Within each household, the respondent is randomly selected to avoid bias due to the tendency of persons in certain age or sex groups to answer the telephone more frequently. If the selected respondent is not available at the time of the call, an appointment is made to complete the interview with the selected respondent at a later time.

Calls to the selected phone number are made according to a standard procedure with regard to time of day and number of callbacks. Interviews are conducted over a one- to two-week period each month throughout the year. The schedule for interviewing and the period of interview is standard, according to protocol established by CDC. The standard interview period allows for comparison with other states that conduct the survey and reduces the possibility of bias due to seasonal variation in certain life-styles.

In South Carolina, Behavioral Risk Factor Survey telephone calls are made and interviews are conducted by interviewers of the South Carolina Department of Health and Environmental Control. Calls are made primarily during weekday evening hours between 5:00 P.M. and 9:30 P.M., but are also made during earlier hours and on weekends. Six interviewers and one supervisor conduct the interviews.

The South Carolina BRFS uses computer-assisted telephone interviewing (CATI). CATI permits direct entry of the data into a computer file, which facilitates data coding and entry, interviewer monitoring, and quality control procedures. As the surveillance staff carry out data collection, the staff supervisor performs initial edits on all questionnaires on a daily basis during the interview period. At the conclusion of the interviewing cycle each month, the supervisor compiles the edited data on diskettes, which are forwarded to CDC for further editing, compilation, and weighting of the final data set.

Weighting factors are computed by CDC to compensate for sampling bias and provide more representative population-based estimates of risk factor prevalence. Adjustments are also made to approximate estimates of age, race, and sex. The CDC adjustments also attempt to correct for telephone non-coverage, non-response, and refusals. Unless otherwise noted, prevalence estimates shown in this report are based on weighted data and, thus, apply to the total adult population in South Carolina.

Response Rates

During 1990, 6,409 telephone calls were made for the South Carolina Behavioral Risk Factor Survey. These calls resulted in 2,239 completed interviews. The disposition of telephone calls made for the 1990 BRFS are presented in Table 3:

Table 3
DISPOSITION OF TELEPHONE CALLS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

DISPOSITION	NUMBER	PERCENT
Completed Interviews	2,239	34.9
Refusals	379	5.9
Non-Working Number	1,820	28.4
No Answer (Multiple Tries)	750	11.7
Business Phone	680	10.6
No Eligible Respondent	35	0.5
Selected Respondent Unavailable	410	6.4
Language Barrier	10	0.2
Terminated Within Questionnaire	8	0.1
Busy Signal (Multiple Tries)	42	0.7
Mental/Physical Impairment	36	0.6
TOTAL	**6,409**	**100.0**

Two response rates were derived, according to two different methods of calculation. The Upper Bound response rate (cooperation rate), which represents the ratio of completed interviews to the total number of eligible respondents contacted (the sum of completed interviews, refusals, and terminations), was

85.3%. The CASRO (Council of American Survey Research Organizations) response rate is the proportion of the telephone numbers called that resulted in completed interviews (the ratio of completed interviews to the sum of completed interviews, refusals, and a standard fraction of numbers which were working but for which an interview was not completed). The CASRO response rate for the 1990 Behavioral Risk Factor Survey was 64.6%.

Accuracy of Data

The 1990 South Carolina BRFS was designed to produce prevalence data accurate at approximately ±3% of the true mean values at the 95% confidence level. This means that the overall prevalences (percentages) obtained from the survey are within plus or minus 3% of the responses expected of the total South Carolina adult population.

Prevalence estimates by demographic variable (sex, age, race, etc.) do not reflect this level of accuracy. Breaking down the data by demographic variables decreases the sample size of individual strata and decreases the statistical power to determine statistically significant differences. Some data in this report may not be reported as statistically significant because of small sample sizes.

Characteristics of the Sample Population

Even with careful, random sample selection, a sample survey frequently will not be truly representative of the population. Therefore, the weighting factors applied to the survey data by CDC account for the age, race, and sex distribution of adults in the state, as well as for the respondent's probability of selection, and more accurately estimate the actual prevalence of behavioral risk factors in the adult population.

All BRFS respondents were asked demographic information, including age, sex, and race. Six records were deleted from the final data file of the 1990 survey because of missing age or race values. Therefore, while 2,239 interviews were completed, the demographic data in Table 4 are based on a sample size of 2,233 South Carolinians 18 years of age or older. The unweighted data indicate that, compared to 1989 intercensal population estimates, the survey underrepresented males, nonwhites, and younger persons, while overrepresenting females, whites, and, particularly, the elderly.

Table 4
CHARACTERISTICS OF THE SAMPLE POPULATION
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

	Unweighted Data		Weighted Data
Characteristic	**Number**	**Percent**	**Percent***
TOTAL	2,233	100.0	100.0
Sex			
Male	870	39.0	47.8
Female	1,363	61.0	52.2
Race			
White	1,684	72.8	71.4
Nonwhite	549	27.2	28.6
Race-Sex			
White Male	713	31.9	34.7
White Female	971	43.5	36.7
Nonwhite Male	157	7.0	13.1
Nonwhite Female	392	17.6	15.5
Age			
18-24	233	10.4	15.4
25-34	495	21.5	24.5
35-44	470	21.0	20.2
45-54	330	14.8	13.5
55-64	273	12.2	11.4
≥65	432	19.4	15.0
Education			
< High School	491	22.0	21.3
High School Grad	787	35.2	36.2
Some Tech Sch/Grad	131	5.9	5.5
Some College/Grad	824	36.9	37.0
Employment			
Employed	1,395	62.5	65.9
Unemployed	91	4.1	4.4
Homemaker	212	9.5	8.5
Student	61	2.7	4.3
Retired	474	21.2	16.9
Income			
< $10,000	310	13.9	12.1
$10 - $14,999	221	9.9	9.9
$15 - $19,999	229	10.3	9.7
$20 - $24,999	304	13.6	13.2
$25 - $34,999	284	12.7	12.9
≥$35,000	519	23.2	25.0
Not Reported	366	16.4	17.2

*Survey data weighted to 1989 intercensal estimates from the U.S. Bureau of the Census. Other races are included in the Nonwhite percentage.

Limitations

Telephone interviewing provides an affordable means of monitoring health behaviors. However, the telephone survey methodology itself and the self-reported nature of the data collected result in some limitations that require caution in interpretation of the findings.

First, telephone surveys may lead to biased population estimates because of over- or under-representation of certain groups. This bias may result from difficulty in contacting these persons, from higher refusal rates, or from lower rates of telephone coverage. The weighting of the data to account for the age, race, and sex distribution of the population is done to at least partially correct for this potential bias.

The validity of survey results is also dependent upon the accuracy of the responses given by the persons interviewed. The accuracy of responses is affected by the respondents' ability to accurately recall past behavior and willingness to respond honestly. Individuals may not accurately recall blood pressure and cholesterol levels. Survey respondents may understate behaviors that are generally considered unhealthy, socially unacceptable, or illegal. People may report a healthier lifestyle than they actually practice, and the accuracy of their responses may vary from one risk factor to another. The amount and direction of these potential biases vary depending on the specific risk factor.

Comparing the prevalence of risk factors with other states also requires caution. While prevalences for the overall sample survey population are generally accurate, as noted earlier, the degree of accuracy diminishes as the data are separated into detailed demographic components. For example, percentages for nonwhite males 18-24 years old will not be as accurate as those for all nonwhite males, for all nonwhites, or for the total sample. Such detailed data have large sampling errors and, therefore, should be interpreted with extreme caution.

When comparing prevalence data from one jurisdiction to another, it is also important that the means of defining and measuring risk factors are the same. For example, overweight can be defined based on ideal body weight or on a body mass index. High blood pressure and high cholesterol can be defined in different ways, and risk factor prevalences will differ depending on the definition used. Prevalences will also differ from data based on actual clinical measurements.

SURVEY RESULTS

- Cigarette Smoking
- Hypertension
- High Blood Cholesterol
- Sedentary Life-Style
- Overweight
- Dietary Fat Intake
- Fruit and Vegetable Intake
- Seat Belt Non-Use
- Chronic Drinking
- Breast Cancer Screening
- Cervical Cancer Screening

Glossary of Symbols, Abbreviations, and Definitions

>: Greater than
<: Less than
≥: Equal to or greater than
≤: Less than or equal to

BRFS: Behavioral Risk Factor Survey
CDC: Centers for Disease Control

At Risk: Describes an individual or group that is considered more susceptible to a health problem than the rest of the population by virtue of their biological status, life-style, or personal behavior.

Prevalence: The percentage of survey respondents who reported the behavioral risk factor of interest. The percentage is calculated using survey data which have been weighted to reflect the age, race, and sex distribution of the state's population. Weighted data compensate for sampling bias and provide more representative population-based estimates of risk factor prevalence among South Carolina adults.

Risk Factor: An aspect of personal behavior or life-style, or an inborn or inherited characteristic, which on the basis of epidemiological evidence is known to be associated with health problems.

Risk Factor Definitions:

Cigarette Smoking - Ever smoked at least 100 cigarettes and currently smoke.

Hypertension - Told blood pressure is high and/or currently taking medication to control hypertension.

High Cholesterol - Never had cholesterol checked; had cholesterol checked and been told, at least once, that it was high.

Sedentary Life-Style - No physical exercise or exercise less than 3 times a week for less than 20 minutes per session.

Overweight - Females: Body Mass Index of ≥27.3%; Males: Body Mass Index of ≥27.8%.

Dietary Fat Intake - Categorized as medium or high fat consumer.

Fruit and Vegetable Intake - Eat fewer than 5 servings of fruits and vegetables daily.

Seat Belt Non-Use - Sometimes, seldom, or never use seat belts when driving or riding in a car.

Cancer Screening - Never had a breast physical exam, a mammogram, or a Pap test.

CIGARETTE SMOKING

Risk Summary

For more than a decade, smoking has been recognized as the chief avoidable cause of disease and preventable premature mortality in the United States. Cigarette smoking has been linked with heart disease, cancer, and stroke, as well as other health problems, such as respiratory infections, ulcers, and poor pregnancy outcomes due to low-weight births.[1,2]

CDC's conservative estimate of 434,000 smoking-related deaths in the United States in 1988[3] was 11% higher than the 1985 estimate of 390,000 (one out of every six deaths) in 1985.[2] Smoking doubles the risk of death from heart disease and causes nearly 90% of lung cancer deaths, 30 percent of all cancer deaths, 80% of chronic obstructive pulmonary disease deaths, and nearly 20% of stroke deaths.[4]

The lethal consequences of smoking reflected in these statistics could be substantially reduced by smoking cessation. According to the Surgeon General, for smokers who quit before age 50, the risk of premature death is only half that of persons who continue to smoke. Specific benefits outlined by the Surgeon General include:

- The risk of dying from **coronary heart disease** is reduced by half among those who quit smoking after only one year of smoking cessation, and the risk continues to decline; after 15 years of smoking cessation, the risk of coronary heart disease is similar among both non-smokers and former smokers.

- Smoking cessation reduces the risk of **cancer** at several sites, including lung cancer: after 10 years of smoking cessation, former smokers have 30-50% of the risk of those who continue to smoke.
- Within 5 to 15 years of smoking cessation, the risk of **stroke** among former smokers declines to that of non-smokers.[2]

1990 BRFS Results

Survey respondents were considered at risk if they reported that they have smoked at least 100 cigarettes in their life and they currently smoke. Table 5 shows the prevalence (percentage) of current smokers by demographic characteristics. The overall prevalence of cigarette smoking in 1990 was 25%. Statistically significant differences in smoking were found in the following variables:

Sex: There was a higher percentage of smokers among men (29%) than among women (21%).

Race: More whites (27%) than nonwhites (20%) smoked.

Race-Sex: Smoking prevalence was highest among white (30%) and nonwhite (28%) males; there was almost a twofold difference in prevalence between white females (24%) and nonwhite females (13%).

Age: Smoking prevalence increased with age, from 22% among 18-24-year-olds to a high of 31% among those 35-44 years old, and then decreased to a low of 14% among the elderly (≥65 years old).

Education: Persons with the least education (< high school) were the most likely to be smokers (31%), while those with the most education (some college/college graduates) were the least likely to be smokers (19%).

Employment: The unemployed (40%) were 1.5 times more likely to be smokers than employed persons (27%); smoking prevalence was lowest among students (14%).

Differences in smoking prevalence by income were not statistically significant

Table 5
PREVALENCE OF CIGARETTE SMOKING BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**25**		
Sex		**Race**	
Male	29	White	27
Female	21	Nonwhite	20
Race-Sex		**Age**	
White Male	30	18-24	22
White Female	24	25-34	29
Nonwhite Male	28	35-44	31
Nonwhite Female	13	45-54	29
		55-64	20
		≥65	14
Education		**Employment**	
< High School	31	Employed	27
High School Grad	26	Unemployed	40
Some Tech Sch/Grad	29	Homemaker	20
Some College/Grad	19	Student	14
		Retired	18
Income			
< $10,000	27		
$10 - $14,999	24		
$15 - $19,999	23		
$20 - $24,999	31		
$25 - $34,999	28		
≥$35,000	22		
Not Reported	22		

Definition: Ever smoked at least 100 cigarettes and currently smoke.

Due to inadequate sample sizes, tests of statistical significance were not performed on the data in Tables 6, 7, and 8. Therefore, the following information is for descriptive purposes only.

Percentage of Smokers Who Have Ever Made a Serious Attempt to Quit Smoking Cigarettes (Table 6) - A substantial percentage (64%) of current smokers had made a serious attempt to quit smoking. Across all demographic variables, over half of the smokers had tried to quit. Males and females were equally likely to have tried to quit, but nonwhites (68%)--particularly nonwhite females (76%)--were most likely to have attempted to quit smoking.

There was little difference in attempts to quit smoking by age group. Prevalence was lowest among the youngest (18-24: 57%) and oldest (≥65: 59%) age groups and highest among the 25-34 age group (69%). Persons with more education were more likely to have tried to quit smoking. The highest percentage of smokers who had tried to quit had attended college (68%), while the lowest percentage had not completed high school (58%).

Retired persons (70%) and students (68%) were more likely to have made attempts at quitting than those who were employed or homemakers (63%). Attempts to quit smoking generally increased as income increased. The highest prevalence was among those earning $35,000 or more (71%).

Table 6
PERCENTAGE OF CIGARETTE SMOKERS WHO HAVE EVER MADE A SERIOUS ATTEMPT TO QUIT SMOKING BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**64**		
Sex		**Race**	
Male	64	White	63
Female	65	Nonwhite	68
Race-Sex		**Age**	
White Male	64	18-24	57
White Female	62	25-34	69
Nonwhite Male	64	35-44	63
Nonwhite Female	76	45-54	65
		55-64	65
		≥65	59
Education		**Employment**	
< High School	58	Employed	63
High School Grad	66	Unemployed	65
Some Tech Sch/Grad	65	Homemaker	63
Some College/Grad	68	Student	68
		Retired	70
Income			
< $10,000	67		
$10 - $14,999	58		
$15 - $19,999	59		
$20 - $24,999	62		
$25 - $34,999	69		
≥$35,000	71		
Not Reported	55		

Percentage of Smokers Who Stopped Smoking for a Week or More During the Past Year (Table 7) - While nearly two thirds of current smokers had attempted to quit smoking, only a fourth had actually stopped for a week or more during the past year. Prevalences were the same for males and females (25%), but nonwhites (32%) were more successful than whites (23%). Twice as many nonwhite females (42%) as white females (21%) had stopped for at least a week, while there was no difference between white (25%) and nonwhite (26%) males.

Prevalences generally decreased by age. Almost half (46%) of the youngest age group (18-24) had stopped, compared with only 11% of those aged 45-54. While those who had attended or graduated from college were most likely to have stopped (29%), prevalences for those with less than a high school education and high school graduates were very similar (27% and 23%, respectively). The lowest prevalence (15%) was among those who attended or graduated from technical schools.

Students were about twice as likely to have stopped smoking for a week or more during the past year (53%) than persons in any other employment category. There was no difference between employed and unemployed persons (27% and 26%, respectively), but those least likely to have stopped were retired (19%) or homemakers (11%). No discernible pattern was found according to income category.

Table 7
PERCENTAGE OF CIGARETTE SMOKERS WHO STOPPED SMOKING FOR A WEEK OR MORE DURING THE PAST YEAR BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**25**		
Sex		**Race**	
Male	25	White	23
Female	25	Nonwhite	32
Race-Sex		**Age**	
White Male	25	18-24	46
White Female	21	25-34	28
Nonwhite Male	25	35-44	23
Nonwhite Female	42	45-54	11
		55-64	21
		≥65	27
Education		**Employment**	
< High School	27	Employed	27
High School Grad	23	Unemployed	26
Some Tech Sch/Grad	15	Homemaker	11
Some College/Grad	29	Student	53
		Retired	19
Income			
< $10,000	28		
$10 - $14,999	25		
$15 - $19,999	17		
$20 - $24,999	28		
$25 - $34,999	12		
≥$35,000	25		
Not Reported	43		

Smoking Prevalence and Cessation (Table 8) - Close to half the survey respondents (46%) reported smoking at least 100 cigarettes in their lifetime (ever smokers). Of these, 25% were current smokers, and 26% were former smokers.

There was little variation among former smokers by sex or race. The largest percentage were white males (28%), who also accounted for the largest percentage (59%) of ever smokers. Conversely, the smallest percentage were nonwhite females, who also accounted for the smallest percentage of ever smokers.

The percentage of former smokers generally increased with age, from a low of below 20% for persons under 34 to a high of 37% for the 55-64 age group. The prevalence of former smokers also increased with educational attainment, from a low of 21% among those with less than a high school education to a high of 32% for persons who had attended or completed college.

The Quit Ratio (ratio of Former Smokers to Ever Smokers) indicates that, overall, 57% of smokers had successfully quit smoking. Females were more successful (65%) than males (49%) and nonwhites (61%) were more successful than whites (53%).

Quit Ratios were highest for the youngest (18-24: 66%) and oldest (≥65: 80%; 55-64: 79%) age groups, and for those who had attended or completed college (73%). Persons who did not finish high school had the lowest Quit Ratio (42%).

Table 8
SMOKING PREVALENCE AND CESSATION BY DEMOGRAPHIC CHARACTERISTICS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Ever Smoked[1] (%)	Current Smoker[2] (%)	Former Smoker[3] (%)	Quit Ratio[4] (%)
TOTAL	**46**	**25**	**26**	**57**
Sex				
Male	55	29	27	49
Female	37	21	24	65
Race				
White	51	27	27	53
Nonwhite	33	20	20	61
Race-Sex				
White Male	59	30	28	47
White Female	43	24	25	58
Nonwhite Male	46	28	21	46
Nonwhite Female	23	13	18	78
Age				
18-24	29	22	19	66
25-34	43	29	16	37
35-44	53	31	25	47
45-54	58	29	26	45
55-64	47	20	37	79
≥65	44	14	35	80
Education				
< High School	50	31	21	42
High School Grad	44	26	22	50
Some Tech Sch/Grad	51	29	25	49
Some College/Grad	44	19	32	73

[1] Ever Smoker: A respondent who reported having smoked 100 or more cigarettes in his or her lifetime.

[2] Current Smoker: A respondent who had smoked 100 or more cigarettes and currently smokes.

[3] Former Smoker: A respondent who was not currently smoking, but who reported having smoked 100 or more cigarettes during his or her lifetime.

[4] Quit Ratio: The ratio of Former Smokers to Ever Smokers.

A pairwise comparison was performed to examine associations between smoking and other risk factors. Table 9 shows the percentage of other risk factors present among smokers compared to non-smokers. Statistically significant associations were found between smoking and the following health risk factors: seat belt non-use, hypertension, overweight, sedentary life-style, and chronic drinking.

Table 9
PERCENTAGE OF RESPONDENTS WITH OTHER RISK FACTORS
BY SMOKING STATUS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Other Risk Factors	Smokers	Non-Smokers
Seat Belt Non-Use	22	11
Hypertension	14	19
Overweight	22	26
Sedentary Life-Style	74	67
Chronic Drinking	5	2
High Blood Cholesterol	25	66

Note: Percentages based on unweighted data.

Year 2000 Health Objectives for the Nation

There are two Year 2000 Health Objectives concerning cigarette smoking. One is to reduce cigarette smoking prevalence to no more than 15% of adults aged 20 and older. While the age groups are not exactly comparable, South Carolina's 1990 prevalence of 25% among adults aged 18 and older is well above the Year 2000 objective.

A related objective is to increase to at least 50% the proportion of cigarette smokers aged 18 and older who stopped smoking cigarettes for at least one day during the preceding year. While it is possible to determine the number of South Carolinians who stopped smoking for at least a day using BRFS results, only serious attempts at quitting were examined for this report. Serious attempts, defined as having quit for at least a week, were made by 25% of 1990 BRFS respondents.

HYPERTENSION

Risk Summary

Hypertension, the medical name for high blood pressure, is a major risk factor for heart disease and stroke. People with hypertension are three to four times more likely to develop coronary heart disease and seven times more likely to suffer a stroke than those with normal blood pressures.[1] Approximately 58 million Americans have high blood pressure (≥140/90 mm Hg) or are on high blood pressure medicine.[5]

The prevalence of hypertension increases with age and is higher, overall, among blacks (38%) than whites (29%).[6] Black males have the highest death rate from heart disease and stroke of any population group. Their heart disease death rate (286.2 per 100,000) is 30% higher than that of white males (220.5) and nearly 60% higher than that of black females (181.1). Their death rate from stroke (57.8) is substantially higher than that of black females (46.6) and nearly double that of white males (30.0).[7]

Because there are no apparent symptons of high blood pressure, it often remains undetected until a heart attack or stroke occurs. Thus, it is imperative that it be checked routinely. There is no cure for hypertension, but it can be controlled. Prevention of high blood pressure and control of mildly elevated blood pressure can be achieved by means of weight control, exercise, and restriction of alcohol and sodium intake.[1] Higher blood pressure levels may require the use of antihypertensive medication.

Controlling high blood pressure is one of the most effective means of reducing mortality in the adult population.[8] Clinical trials show that blood pressure reduction significantly reduces stroke mortality, and can also help reduce deaths from coronary heart disease.[9]

Recent research suggests that the importance of mild (and even borderline) hypertensives taking steps to lower their blood pressures is even greater than previously recognized. In one study, borderline and mild hypertensives showed early signs of structural and functional changes in the heart and blood vessels that could increase their risk of heart attack.[10] In another study, which pooled data from 14 studies involving 37,000 patients, a five- to six-point reduction in blood pressure reduced the risk of coronary disease by 14% and the risk of stroke by 42%.[11]

1990 BRFS Results

Survey respondents were considered at risk if they reported that they had been told their blood pressure is high and/or they are currently taking medication to control hypertension. Table 10 presents the prevalence of hypertension by demographic characteristics. The overall prevalence of hypertension in

1990 was 18%. Statistically significant differences in hypertension were found in the following variables:

Sex: More women (20%) than men (14%) reported being hypertensive.

Race: A higher proportion of hypertension was found among nonwhites (23%) than among whites (15%).

Race-Sex: The prevalence of hypertension was very similar among white males (15%), white females (16%), and nonwhite males (14%). However, the prevalence for nonwhite females (30%) was more than double that of nonwhite males (14%) and nearly double that of white females (16%).

Age: Hypertension increased with age, from a low prevalence of 3% among 18-24-year-olds to a high prevalence of 42% among the elderly (≥65).

Education: Hypertension was more prevalent among those with less education. Persons who had not finished high school had the highest prevalence (29%), while those who had attended or completed college had the lowest prevalence (12%).

Employment: The highest percentage of hypertensives (41%) was found among retirees. The proportions of unemployed persons (22%) and homemakers (20%) with hypertension were about half that of retirees, but nearly double that of unemployed persons

(12%). The prevalence of hypertension was lowest among students (6%).

Income: Hypertension decreased as income levels increased. Persons making <$10,000 had the highest proportion of hypertensives (33%); the lowest proportion was among those making $25,000-$34,999 (12%).

It should be noted that, because of the BRFS definition used, only persons who are aware that they have hypertension are included in the at risk data in this report. The data exclude an undetermined at risk population of individuals who have hypertension but are not aware that they have it. Therefore, the true prevalence of hypertension may be higher than data in this report indicate.

Table 10
PREVALENCE OF HYPERTENSION BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**18**		
Sex		**Race**	
Male	14	White	15
Female	20	Nonwhite	23
Race-Sex		**Age**	
White Male	15	18-24	3
White Female	16	25-34	6
Nonwhite Male	14	35-44	11
Nonwhite Female	30	45-54	23
		55-64	36
		≥65	42
Education		**Employment**	
< High School	29	Employed	12
High School Grad	16	Unemployed	22
Some Tech Sch/Grad	19	Homemaker	20
Some College/Grad	12	Student	6
		Retired	41
Income			
< $10,000	33		
$10 - $14,999	22		
$15 - $19,999	13		
$20 - $24,999	13		
$25 - $34,999	12		
≥$35,000	13		
Not Reported	20		

Definition: Told blood pressure is high and/or currently taking medication to control hypertension.

A pairwise comparison was performed to examine associations between hypertension and other risk factors. Table 11 shows the percentage of other risk factors present among hypertensives compared to non-hypertensives. Statistically significant associations were found between hypertensives and the following health risk behaviors: smoking, overweight, sedentary life-style, and high blood cholesterol.

Table 11
PERCENTAGE OF RESPONDENTS WITH OTHER RISK FACTORS
BY HYPERTENSION STATUS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Other Risk Factors	Hypertensive	Non-Hypertensive
Smoking	19	26
Seat Belt Non-Use	15	14
Overweight	43	21
Sedentary Life-Style	74	68
Chronic Drinking	1	3
High Blood Cholesterol	29	70

Note: Percentages based on unweighted data.

Year 2000 Health Objectives for the Nation

The Year 2000 Health Objectives include two that concern reducing the risk of hypertension. One is to increase to at least 90 percent the proportion of people with high blood pressure who are taking action to help control their blood pressure. The 1990 BRFS included a question concerning taking medication to control high blood pressure, but did not assess non-medical methods (e.g., exercise, losing weight, reducing sodium and alcohol intake). Therefore, it is not possible to estimate South Carolina's progress toward achieving this objective.

The other objective is to increase to at least 50 percent the proportion of hypertensives whose blood pressure is under control. The 1990 BRFS did not assess high blood pressure control. However, according to surveys conducted as part of the South Carolina High Blood Pressure Control Project (funded by the National Heart, Lung and Blood Institute, 1978-1982), the prevalence of adult hypertensives with their blood pressure under control increased from 13 percent at baseline to 20 percent at follow-up.[12] As of 1987, based on data from the South Carolina Cardiovascular Disease Project (funded by CDC, 1986-1991), the prevalence had increased to approximately 32%.

The Year 2000 Health Objectives include a Services and Protection objective to increase to at least 90% the proportion of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high. The 1990 BRFS did not address the time since respondents' last had their blood pressure checked; neither did it assess respondents' direct knowledge of normal or high blood pressure readings. Therefore, progress toward achieving this objective cannot be measured using BRFS data.

HIGH BLOOD CHOLESTEROL

Risk Summary

High blood cholesterol is one of the major modifiable risk factors for coronary heart disease,[5] the leading cause of death in the United States.[7] The National Heart, Lung, and Blood Institute's (NHLBI) National Cholesterol Education Program has established guidelines for the treatment of adults with high blood cholesterol. According to these guidelines, a serum cholesterol level of ≥240 mg/dL is high and 200-239 mg/dL is borderline high. A level of <200 is desirable.[13]

Mean serum cholesterol levels have declined since 1960,[1] contributing to a 42% drop in the coronary heart disease death rate between 1964 and 1985.[5,7] Despite these declines, however, approximately 60 million U.S. adults have cholesterol levels high enough to require medical advice and intervention.[14]

1990 BRFS Results

Survey respondents were considered at risk if they reported that they had never had their blood cholesterol checked. Table 12 presents the prevalence of lack of cholesterol screening by demographic characteristics. The overall prevalence of lack of cholesterol screening in 1990 was 33%. Statistically significant differences in lack of cholesterol screening were found in the following variables:

Race: Nonwhites were somewhat more likely to have never had their cholesterol level checked. Among survey respondents, 30% of whites and 42% of nonwhites reported that they had never had their cholesterol checked.

Race-Sex: Males and females within each race group were equally likely to have never had their cholesterol checked. For nonwhite males and females the prevalence was 42%. Among whites, the prevalence for males was 29% and the prevalence for females was 31%.

Age: Except for respondents ≥65 years of age, the likelihood of having had cholesterol checked increased with age. The largest proportion (56%) of respondents who had never had their cholesterol checked were aged 18-24, while the smallest proportion (14%) were aged 55-64. Among the elderly (≥65), 20% had never had their cholesterol checked.

Education: Cholesterol screening increased with education. Respondents who did not finish high school were most likely to have never had their cholesterol checked (40%), while those who attended or completed college were least likely (26%).

Employment: The prevalence of never having had cholesterol checked was essentially the same for persons who were employed (35%), unemployed (34%), or homemakers (34%). Prevalence was highest (51%) among students and lowest (19%) among retirees.

Income: Cholesterol screening generally increased with income. Those in the highest income category (≥$35,000) were least likely to have never had their cholesterol checked (24%), while those in the lowest income categories (<$10,000 and $10,000-$14,999) were most likely to have never had their cholesterol checked (40% and 47%, respectively).

Differences in lack of cholesterol screening by sex were not statistically significant.

Table 12
PREVALENCE OF LACK OF CHOLESTEROL SCREENING BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	33		
Sex		**Race**	
Male	32	White	30
Female	34	Nonwhite	42
Race-Sex		**Age**	
White Male	29	18-24	56
White Female	31	25-34	43
Nonwhite Male	42	35-44	30
Nonwhite Female	42	45-54	24
		55-64	14
		≥65	20
Education		**Employment**	
< High School	40	Employed	35
High School Grad	36	Unemployed	34
Some Tech Sch/Grad	36	Homemaker	34
Some College/Grad	26	Student	51
		Retired	19
Income			
< $10,000	40		
$10 - $14,999	47		
$15 - $19,999	39		
$20 - $24,999	36		
$25 - $34,999	33		
≥$35,000	24		
Not Reported	30		

Definition: Never had cholesterol checked.

The National Cholesterol Education Program (NCEP) recommends that adults ≥20 years of age have their blood cholesterol level measured at least once every 5 years. Table 13 shows the percentage of South Carolina BRFS respondents who had had their cholesterol checked within the past 5 years by demographic characteristics. Overall, 60% of 1990 BRFS respondents had had their cholesterol checked within the past 5 years. Statistically significant differences in having had cholesterol checked within the past 5 years were found in the following variables:

Race: More than half of nonwhite respondents (52%) and nearly two thirds (64%) of white respondents had had their cholesterol level checked within the past 5 years.

Race-Sex: White males and females were equally likely to have had their cholesterol level checked within the past 5 years (64%), while nonwhite females were somewhat more likely (54%) than nonwhite males (49%) were to have done so.

Age: Cholesterol screening within the past 5 years increased steadily with age, except in the ≥65 age group. Prevalence was highest (70%-82%) among persons ≥45 years of age and lowest among those 18-24 years old (35%).

Education: Cholesterol screening within the past 5 years increased with educational attainment. Persons who did not complete high school were the least likely to have had their cholesterol level checked within the past 5 years (50%), while those who attended or completed college were the most likely to have had it done (68%).

Employment: Prevalence of cholesterol screening within the past 5 years was highest among retirees (71%) and lowest among students (31%). Homemakers were somewhat more likely to have had their cholesterol checked within the past 5 years (63%) than either the employed or unemployed, whose prevalences were essentially the same (59% and 58%, respectively).

Income: The higher the income of respondents, the more likely they were to have had their cholesterol level checked within the past 5 years. More than half the respondents in all income categories had had their cholesterol checked within the past 5 years. Prevalence was highest for those with incomes of ≥$35,000 (71%) and lowest for those with incomes under $15,000 (52%-53%).

Differences in cholesterol screening within the past 5 years by sex were not statistically significant.

Table 13
PERCENTAGE OF RESPONDENTS WHO HAD THEIR CHOLESTEROL CHECKED WITHIN THE PAST FIVE YEARS BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**60**		
Sex		**Race**	
Male	60	White	64
Female	61	Nonwhite	52
Race-Sex		**Age**	
White Male	64	18-24	35
White Female	64	25-34	51
Nonwhite Male	49	35-44	66
Nonwhite Female	54	45-54	70
		55-64	82
		≥65	70
Education		**Employment**	
< High School	50	Employed	59
High School Grad	59	Unemployed	58
Some Tech Sch/Grad	58	Homemaker	63
Some College/Grad	68	Student	31
		Retired	71
Income			
< $10,000	53		
$10 - $14,999	52		
$15 - $19,999	56		
$20 - $24,999	58		
$25 - $34,999	61		
≥$35,000	71		
Not Reported	58		

Survey respondents were considered at risk if they reported that they had had their blood cholesterol checked and had been told, on at least one occasion, that it was high. Table 14 shows the prevalence of high blood cholesterol by demographic characteristics. The overall prevalence of high cholesterol in 1990 was 15%. Statistically significant differences in high cholesterol were found in the following variables:

Sex: Females were somewhat more likely to report having high cholesterol (16%) than males (13%).

Race: The prevalence of high cholesterol was higher among whites (16%) than nonwhites (11%).

Race-Sex: High cholesterol was most often found among white females (18%), followed by white males (15%). Nonwhite females were nearly as likely (13%) as white females to report having high cholesterol, while the prevalence among nonwhite males was only 9%.

Age: In general, reported high blood cholesterol increased with age. The lowest prevalence (2%) was among respondents aged 18-24, and increased steadily to a high of 30% among those aged 55-64. The proportion of respondents with high cholesterol declined to 19% among the elderly (≥65).

Employment: There was little difference in the prevalence of high blood cholesterol between the employed and unemployed, except that the lowest prevalence was among students (1%). Homemakers (19%) and retired persons (20%) were the most likely to report having high cholesterol.

Differences in high blood cholesterol by education and income were not statistically significant.

It should be noted that, as in the case of hypertension, the true prevalence of high blood cholesterol may be higher than data in this report indicate because only persons who have had their cholesterol checked and been told, on at least one occasion, that it is high are included in the at risk data here. The data exclude an undetermined at risk population of individuals who have high cholesterol but are not aware that they have it.

Table 14
PREVALENCE OF HIGH BLOOD CHOLESTEROL BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**15**		
Sex		**Race**	
Male	13	White	16
Female	16	Nonwhite	11
Race-Sex		**Age**	
White Male	15	18-24	2
White Female	18	25-34	10
Nonwhite Male	9	35-44	15
Nonwhite Female	13	45-54	21
		55-64	30
		≥65	19
Education		**Employment**	
< High School	13	Employed	14
High School Grad	14	Unemployed	12
Some Tech Sch/Grad	14	Homemaker	19
Some College/Grad	17	Student	1
		Retired	20
Income			
< $10,000	15		
$10 - $14,999	10		
$15 - $19,999	14		
$20 - $24,999	15		
$25 - $34,999	15		
≥$35,000	18		
Not Reported	15		

Definition: Had cholesterol checked and been told, at least once, that it was high.

A pairwise comparison was performed to examine associations between high blood cholesterol and other risk factors. Table 15 shows the percentage of other risk factors present among respondents with high cholesterol compared to respondents who did not report having high cholesterol. Statistically significant associations were found between high cholesterol and the following health risk factors: hypertension and overweight.

Table 15
PERCENTAGE OF RESPONDENTS WITH OTHER RISK FACTORS
BY HIGH BLOOD CHOLESTEROL STATUS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Other Risk Factors	High Cholesterol	Not High Cholesterol
Smoking	25	25
Seat Belt Non-Use	12	14
Hypertension	29	16
Overweight	31	24
Sedentary Life-Style	66	69
Chronic Drinking	2	3

Note: Percentages based on unweighted data.

Year 2000 Health Objectives for the Nation

In the area of Services and Protection, the Year 2000 Health Objectives call for increasing to at least 75% the proportion of adults who have had their blood cholesterol checked within the preceding 5 years. According to 1990 BRFS results, which indicate that 60% of adult South Carolinians had had their cholesterol checked within the past 5 years, South Carolina currently falls 15% short of achieving the Year 2000 objective.

In the area of Risk Reduction, the Year 2000 Health Objectives call for reducing the prevalence of blood cholesterol levels of 240mg/dL or greater to no more than 20% among adults. 1990 BRFS results, reporting an overall prevalence of high cholesterol of 15%, suggest that South Carolina has met this Year 2000 objective. However, as noted in the 1990 BRFS Results section, the true prevalence of high blood cholesterol may be higher than data in this report indicate because the data exclude an undetermined at risk population of individuals who have high cholesterol but are not aware of it.

Progress toward achieving two other Risk Reduction objectives cannot be assessed using BRFS data. One is to reduce the mean serum cholesterol level among (all) adults to no more than 200 mg/dL. Since one third (33%) of BRFS respondents had never had their cholesterol checked, the data necessary to calculate the mean cholesterol level of South Carolina adults are not available.

The other objective that cannot be measured using BRFS data is to increase to at least 60% the proportion of adults with high blood cholesterol who are aware of their condition and are taking action to reduce their blood cholesterol to recommended levels. Since it is impossible to determine the number of South Carolinians who have high cholesterol but are unaware of it, there are no data on which to measure increases in awareness and action to reduce cholesterol levels.

SEDENTARY LIFE-STYLE

Risk Summary

A sedentary life-style, characterized by a lack of regular, moderate physical activity, impacts on a variety of diseases and health conditions and on overall longevity. Physical inactivity has long been associated with overweight. Sedentary people are twice as likely to die from coronary heart disease as physically active people are.[15] Growing evidence shows an inverse relationship between regular physical activity and all of the major modifiable risk factors associated with coronary heart disease (cigarette smoking, hypertension, high blood cholesterol, diabetes, and obesity), as well as with colon cancer, stroke, osteoporosis, depression, and anxiety.[16,17]

While physical activity should be regular (at least 3 times a week for 20 minutes or more), it does not need to be extremely vigorous. In fact, increasing evidence suggests that **any** light to moderate activity--especially by those who are sedentary--produces health benefits.[18,19]

Sedentary life-style is the most prevalent modifiable risk factor for all of the above-mentioned diseases and health conditions. Thus, a reduction in physical inactivity would have a significant impact on the health of Americans by reducing the chronic diseases that contribute to premature mortality in the United States.

1990 BRFS Results

Survey respondents were considered at risk if they reported that they performed no physical exercise, or exercised less than three times a week for less than 20 minutes per session. Table 16 shows the prevalence of sedentary life-style by demographic characteristics. The overall prevalence of sedentary life-style in 1990 was 69%. Statistically significant differences in sedentary life-style were found in the following variables:

Race: Nonwhites had a higher percentage of persons with a sedentary life-style (77%) than whites (67%).

Race-Sex: Prevalence of sedentary life-style was highest among nonwhite males (77%), followed closely by nonwhite females (75%). White males and females were the least likely to be sedentary. The percentages of sedentary life-style for both sexes were about the same, 67% for white females and 66% for white males.

Age: Sedentary life-style increased with age. Prevalence was lowest (64%) among young people (18-24) and highest (78%) among the elderly (≥65).

Education: Educational attainment appeared inversely related to sedentary life-style, the lower education levels having the highest percentages of sedentary people. The prevalence of sedentary life-style was highest among persons who had not finished high school (80%) and lowest among those who had attended or completed a technical school or college (61%).

Employment: Unemployed persons and retirees reported being sedentary more frequently than students, homemakers, and the employed. The unemployed accounted for the highest percentage of sedentary life-style (78%), while students were least likely to be sedentary (65%).

Income: Generally, sedentary life-style decreased as income increased. Prevalence was highest among those with incomes under $10,000 and lowest among those with incomes of $35,000 or more.

Differences in sedentary life-style by sex were not statistically significant.

Table 16
PREVALENCE OF SEDENTARY LIFE-STYLE BY DEMOGRAPHIC CHARACTERISTICS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**69**		
Sex		**Race**	
Male	69	White	67
Female	70	Nonwhite	76
Race-Sex		**Age**	
White Male	63	18-24	64
White Female	67	25-34	67
Nonwhite Male	77	35-44	67
Nonwhite Female	75	45-54	73
		55-64	71
		≥65	78
Education		**Employment**	
< High School	80	Employed	68
High School Grad	73	Unemployed	78
Some Tech Sch/Grad	61	Homemaker	66
Some College/Grad	61	Student	66
		Retired	74
Income			
< $10,000	81		
$10 - $14,999	77		
$15 - $19,999	69		
$20 - $24,999	65		
$25 - $34,999	66		
≥$35,000	60		
Not Reported	77		

Definition: No physical exercise or exercise less than 3 times a week for less than 20 minutes per session.

Table 17 gives the top ten activities of men and women who exercised in 1990. The activity chosen by the greatest percentage of both men and women was walking. Nearly two thirds of women (64%) and slightly over a third (34%) of men chose walking for exercise. Running was second (12%) among men, while women chose aerobics (9%) second.

Other activities popular among men were golf (9%), basketball (7%), and weight lifting (6%). For women, other popular activities included gardening (5%), swimming laps (3%), and bicycling (3%).

Table 17
TOP TEN ACTIVITIES OF MEN AND WOMEN
WHO EXERCISE
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

MEN			WOMEN		
Rank	**Activity**	**Pct***	**Rank**	**Activity**	**Pct***
1	Walking	34	1	Walking	64
2	Running	12	2	Aerobics	9
3	Golf	9	3	Gardening	5
4	Basketball	7	4	Swimming Laps	3
5	Weight Lifting	6	5	Bicycling	3
6	Gardening	5	6	Running	2
7	Jogging	5	7	Softball	1
8	Softball	4	8	Calisthenics	1
9	Bicycling	3	9	Table Tennis	1
10	Table Tennis	3	10	Weight Lifting	1
11	Other	13	11	Other	9
	Total	100%		Total	100%

*Percentage of those who exercise.

A pairwise comparison was performed to examine associations bewtween sedentary life-style and other risk factors. Table 18 shows the percentage of other risk factors present among people who are sedentary compared to those who are not. Statistically significant associations were found between having a sedentary life-style and the following health risk behaviors: smoking, seat belt non-use, hypertension, and overweight.

Table 18
PERCENTAGE OF RESPONDENTS WITH OTHER RISK FACTORS
BY SEDENTARY LIFE-STYLE
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Other Risk Factors	Sedentary	Not Sedentary
Smoking	26	20
Seat Belt Non-Use	15	11
Hypertension	22	17
Overweight	28	20
Chronic Drinking	2	3
High Blood Cholesterol	17	19

Note: Percentages based on unweighted data.

Year 2000 Health Objectives for the Nation

One of the Year 2000 Health Objectives concerning sedentary life-style is to reduce to no more than 15% the proportion of people aged 6 and older who engage in no leisure-time physical activity. In 1990, 69% of adult South Carolinians reported a sedentary life-style. However, this prevalence is for persons aged 18 and older and includes those who exercised less than three times a week for less than 20 minutes per session.

Therefore, progress toward achieving this objective cannot be measured using BRFS data.

Other Year 2000 objectives call for increases in the proportions of persons who regularly engage in light to moderate and vigorous physical activity and activities that enhance and maintain muscular strength, muscular endurance, and flexibility. These objectives include specification of age groups as well as type, frequency, and intensity of activities. The BRFS cannot be used to measure progress toward achieving these objectives, since age groups are not comparable and intensity level (percentage of maximum heart rate) of self-reported physical activity cannot be ascertained.

It is apparent, however, that South Carolina's 1990 prevalence is substantially above all of the Year 2000 objectives concerning sedentary life-style.

OVERWEIGHT

Risk Summary

Overweight is associated with hypertension, high blood cholesterol, and diabetes; it is also an independent risk factor for coronary heart disease. Additionally, overweight increases an individual's risk for some types of cancer, gallbladder disease, degenerative joint diseases, and stroke.[1,5]

The higher the weight, the greater the risk for both morbidity and mortality.[5] The health risks of being overweight become significant at weights 20% over desirable (based on weight-for-height tables) or at a Body Mass Index (BMI, in kg/m^2) greater than 27. Significantly, increases in mortality associated with increases in weight are not linear; as the percentage of overweight increases, mortality increases more sharply.[20]

The prevalence of overweight among U.S. adults has increased for two decades, and now affects more than a quarter of the adult population.[7] Persons who are in their 20s and 30s are at the highest risk for developing weight problems, with overweight occurring most frequently in the mid-forties.[21]

Overweight is more prevalent among female, minority, and low-income populations.[22] Based on results from the National Health and Nutrition Examination Survey of 1976-80 (NHANES II) and a 10-year follow-up study, the prevalence of overweight in black women was nearly twice that of white women.[23] Women with incomes below poverty had a much higher prevalence of overweight than those with incomes above poverty. In contrast, men with incomes below poverty had a slightly lower prevalence of overweight than those with incomes above poverty.[24] Both males and females with low incomes and low educational levels were nearly twice as likely to experience major weight gain over the ten-year period.[22]

Many social, cultural, genetic, and economic factors affect overweight, making it particularly difficult to treat successfully. The treatment of choice, according to the American Dietetic Association (ADA), is prevention. Along with dietary interventions, the ADA recommends increased physical activity as an essential component of any prevention and treatment program.[25]

1990 BRFS Results

Overweight was determined by means of Body Mass Index (BMI), which is defined as one's weight in kilograms divided by one's height in meters squared. Female survey respondents were considered at risk if they reported a BMI $\geq$27.3%; male respondents were considered at risk if they reported a BMI $\geq$27.8%. Table 19 presents the prevalence of overweight adults by demographic characteristics. The overall prevalence of overweight in 1990 was 25%. Statistically significant differences in overweight were found in the following variables:

Race: A greater percentage of nonwhites (33%) were overweight than whites (22%).

Race-Sex: Overweight was considerably more common in nonwhite females (38%) than in any other race-sex group. Their prevalence was 40% greater than that for nonwhite males (27%), almost double the white female prevalence (20%), and more than 50% higher than that for the state overall (25%).

Age: The percentage of overweight adults increased to age ≥65, then decreased. It was highest for persons aged 45-64 (33%) and lowest for those aged 18-24 (15%).

Education: Those who had less than a high school education had the highest percentage of overweight (35%). High school graduates and those who had attended or completed college had the lowest prevalences (23% and 21%, respectively).

Employment: Prevalence was highest among the unemployed (37%) and lowest among students (17%). Employed persons (25%) and homemakers (27%) had slightly higher percentages of overweight than retirees (24%).

Income: There was little variation in overweight by income categories, although it was highest among those making under $15,000 ($<10,000: 30%; $10,000-$14,000: 32%).

Differences in overweight prevalence by sex were not statistically significant.

Table 19
PREVALENCE OF OVERWEIGHT
BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**25**		
Sex		**Race**	
Male	24	White	22
Female	26	Nonwhite	33
Race-Sex		**Age**	
White Male	23	18-24	15
White Female	20	25-34	20
Nonwhite Male	27	35-44	31
Nonwhite Female	38	45-54	33
		55-64	33
		≥65	23
Education		**Employment**	
< High School	35	Employed	25
High School Grad	23	Unemployed	37
Some Tech Sch/Grad	30	Homemaker	27
Some College/Grad	21	Student	17
		Retired	24
Income			
< $10,000	30		
$10 - $14,999	32		
$15 - $19,999	24		
$20 - $24,999	26		
$25 - $34,999	23		
≥$35,000	24		
Not Reported	21		

Definition: Females - Body Mass Index ≥27.3%
Males - Body Mass Index ≥27.8%

Over half (59%) of the overweight adults in the survey reported that they were trying to lose weight. Table 20 shows the percentage of adults trying to lose weight by demographic characteristics and by weight-loss method. Due to inadequate sample size, statistical significance was not tested. Therefore, the following information is for descriptive purposes only.

Of the overweight adults surveyed, more females (64%) than males (52%) and more nonwhites (61%) than whites (57%) were trying to lose weight. While white females had the lowest prevalence of overweight (see Table 19), they were the most likely to be trying to lose weight (66%). The highest percentages of overweight people trying to lose weight were in age groups under 55 years old (range 60%-66%). The proportion of overweight persons trying to lose weight was smallest (35%) in the ≥65 age group.

Eating fewer calories combined with increased physical activity was the most popular method of losing weight (39%). For those not using both methods, eating fewer calories was more popular than increasing physical activity across all demographic variables except for the younger age groups. Persons under 35 years old preferred increasing physical activity to eating fewer calories. Almost half (49%) of the overweight adults ≥65 years old were using neither of these methods to lose weight.

Table 20

PERCENTAGE OF OVERWEIGHT ADULTS[1] TRYING TO LOSE WEIGHT ACCORDING TO METHOD OF LOSING WEIGHT BY DEMOGRAPHIC CHARACTERISTICS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

		Method of Losing Weight			
Characteristic	**Trying to Lose Weight**	**Eating Fewer Calories**	**Increased Physical Activity**	**Both Methods**	**Neither Method**
TOTAL	**59**	**22**	**12**	**39**	**27**
Sex					
Male	52	22	13	34	31
Female	64	21	11	43	25
Race					
White	57	23	14	37	26
Nonwhite	61	18	9	43	30
Race-Sex					
White Male	49	28	15	27	30
White Female	66	20	12	46	22
Nonwhite Male	58	10	7	51	32
Nonwhite Female	62	22	10	39	29
Age					
18-24	60	13	24	46	17
25-34	66	10	15	57	18
35-44	60	27	15	32	26
45-54	66	26	6	41	27
55-64	56	24	4	37	35
≥65	35	25	11	15	49

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[1] Overweight defined as Body Mass Index ≥27.3% for Females and ≥27.8% for Males. Pregnant women, 18-45 years of age, excluded from analysis.

A pairwise comparison was performed to examine associations between overweight and other risk factors. Table 21 presents the percentage of other risk factors present among overweight adults compared to those who were not overweight. Statistically significant associations were found between overweight and the following health risk factors: smoking, seat belt non-use, hypertension, sedentary life-style, and high blood cholesterol.

Table 21
PERCENTAGE OF RESPONDENTS WITH OTHER RISK FACTORS BY WEIGHT STATUS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Other Risk Factors	Overweight	Not Overweight
Smoking	22	26
Seat Belt Non-Use	17	13
Hypertension	30	12
Sedentary Life-Style	75	67
Chronic Drinking	2	3
High Blood Cholesterol	31	65

Note: Percentages based on unweighted data.

Year 2000 Health Objectives for the Nation

In 1990, 25% of adult South Carolinians reported that they were overweight. The Year 2000 Health Objective is to reduce overweight to a prevalence of no more than 20% among people 20 and older. Since the BRFS includes adults 18 and over, the BRFS prevalence and the Year 2000 Health Objective prevalence are not exactly comparable. However, South Carolina's 1990 prevalence suggests that efforts must continue to reduce overweight among the state's adults if the Year 2000 Objective is to be met.

The Year 2000 Health Objectives also address weight-reduction methods. In recognition of the importance of a combination of caloric control and increased physical activity to attaining and maintaining a healthy body weight, a Year 2000 Health Objective is to increase to at least 50% the proportion of overweight people aged 12 and older who have adopted sound dietary practices combined with regular physical activity to attain an appropriate body weight.

Again, the age groups in the BRFS and the Year 2000 Health Objectives are not comparable. In 1990, 39% of overweight South Carolinians aged 18 and over were using a combination of eating fewer calories and increasing physical activity to lose weight. While the weight-loss methods of overweight adolescents (aged 12-17) in South Carolina are unknown, the adult prevalence is more than 10% below the Year 2000 Objective.

DIETARY FAT INTAKE

Risk Summary

Diets high in fat have long been associated with increased risk of obesity; coronary heart disease; and several types of cancer, particularly cancers of the breast, colon, and prostate.[1,26] Dietary fat contributes more than twice as many calories as the same amount of carbohydrates, thus contributing to overweight. Saturated fats in particular are associated with increased cholesterol levels in the blood, which, in turn, increase the risk of coronary heart disease.[1] And the National Cancer Institute estimates that one third of all cancer deaths may be related to diet.[26]

To reduce the risks of high-fat diets, current dietary guidelines recommend that Americans reduce the fat content of their diets from the current 37% of total calories[5] to 30% or less.[27] It has been estimated that if all Americans reduced their fat intake to 30% of total calories, the corresponding reduction in cholesterol could reduce mortality rates for coronary heart disease by up to 20%.[28]

The effects on mortality from fat-related cancers could be even greater. Prostate cancer mortality might be reduced by 21%-33% and breast cancer mortality might be reduced by about 14%. Adhering to the dietary guidelines for reduced fat intake could save over 40,000 lives a year.[28]

1990 BRFS Results

BRFS respondents were categorized into quartiles of fat intake based on the distribution of fat consumption for all respondents in the state. "High" fat consumers were defined as those who were above the 75th percentile for fat consumption in the state; "medium" fat consumers were those in the 25th through 75th percentile; and "low" fat consumers were those equal to or below the 25th percentile.

The fat consumption data produced by the 1990 BRFS do not reflect persons eating low-fat, medium-fat, or high-fat diets. Rather, the data compares fat intake levels among individuals. Thus, low fat consumers were eating less fat compared with other respondents and, conversely, high fat consumers were eating more fat compared with other respondents.

It should also be noted that the categorization of individuals into high, medium, or low fat intake levels was based on data for a very limited number of sources of dietary fat (13 food items). Therefore, the total fat intake of individuals is surely underestimated by the BRFS.

Despite these limitations, the data can be useful in identifying subgroups that consume a higher fat diet within the state. These subgroups can then be targeted for intervention efforts to reduce dietary fat intake.

Survey respondents were considered at risk if they were categorized as high or medium fat consumers. Table 22 shows daily fat consumption levels of 1990 BRFS respondents by demographic characteristics. Overall, 56% of 1990 BRFS respondents were at risk for higher-than-recommended dietary fat intake.

The large number of cells produced by the combination of demographic variables and fat-consumption categories resulted in cell sizes too small for tests of statistical significance. Therefore, the following information is presented for descriptive purposes only.

Most respondents (36%) were categorized as medium fat consumers; only 17% were categorized as low fat consumers. There was little difference in fat consumption by sex or race, except that males were almost twice as likely to be high fat consumers as females (26% versus 15%, respectively), and whites were somewhat more likely to be medium fat consumers than nonwhites (38% versus 31%, respectively).

Among high fat consumers, prevalences were higher for males of both races (26% and 24%) than for females (17% and 11%). Low fat consumption prevalences were essentially the same for all race-sex groups. There was wider variation among medium fat consumers. Prevalence was highest among white females (40%) and lowest among nonwhite males (26%), while the percentages of medium fat consumers among white males and nonwhite females were about the same (36% and 34%, respectively).

The prevalence of low fat consumption increased with age. The highest prevalences were among those aged 45 and older, while only 8% of those 18-24 years old were low fat consumers. Conversely, high fat consumption prevalences decreased with age, from a high of 37% among 18-24-year-olds to a low of 8% among the elderly (≥65).

Regardless of educational attainment, the largest proportion of respondents were in the medium fat consumption category. Prevalences at the two extremes of fat consumption were similar among all educational attainment categories except high school graduates. High school graduates were almost twice as likely to be high fat consumers (25%) as low fat consumers (14%), while there was very little difference (maximum of 4 percentage points) in prevalence of high and low fat consumption in the other educational attainment categories.

Students were the least likely to be low fat consumers (9%). Although the proportion of low fat consumption was highest among homemakers and retired persons (22%), much higher percentages of people in these categories were medium fat consumers. High fat consumption was highest among students (35%) and lowest among retirees (9%).

There was little variation in low fat consumption or high fat consumption by income categories, prevalences ranging from 15% to 20% among low fat consumers and from 17% to 23% among high fat consumers. There was greater variation by income among medium fat consumers, ranging from 26% to 43%. Overall, the highest prevalences were among medium fat consumers, regardless of income level.

Combining data for the medium and high fat intake categories provides a profile of the population at risk. The data should be interpreted cautiously, however. In addition to the limitations pointed out earlier, fat consumption levels were unknown for a high proportion of several of the demographic variables.

Persons at risk were somewhat more likely to be male (59%) than female (54%) and much more likely to be white (59%) than nonwhite (48%). They were most likely to be young (71% of 18-24-year-olds compared to 38% of persons ≥65) and to be students (72%). High school graduates (64%) and persons whose income was $20,000-$24,999 (63%) were most likely to be at risk.

Those choosing to eat less fat in 1990 were equally likely to be male (15%) or female (18%), white (16%) or nonwhite (18%). They were more likely to be older and to be homemakers or retired. Education and income did not appear to be significant factors for those choosing to eat less fat compared with others in the BRFS sample.

Table 22
DAILY FAT CONSUMPTION
BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Percentile	Daily Fat Consumption ≤25	>25-75	>75	
Characteristic	Low (%)	Med (%)	High (%)	Unknown (%)
TOTAL	**17**	**36**	**20**	**27**
Sex				
Male	15	33	26	26
Female	18	39	15	28
Race				
White	16	38	21	25
Nonwhite	18	31	17	34
Race-Sex				
White Male	14	36	26	24
White Female	18	40	17	25
Nonwhite Male	18	26	24	32
Nonwhite Female	19	34	11	36
Age				
18-24	8	34	37	21
25-34	14	38	27	21
35-44	15	42	19	24
45-54	20	38	10	32
55-64	25	29	11	35
≥65	22	30	8	40
Education				
< High School	19	25	15	41
High School Grad	14	39	25	22
Some Tech Sch/Grad	19	38	18	25
Some College/Grad	17	39	19	25
Employment				
Employed	15	38	23	24
Unemployed	17	24	24	35
Homemaker	22	39	14	25
Student	9	37	35	19
Retired	22	30	9	39
Income				
< $10,000	16	26	17	41
$10 - $14,999	20	31	21	28
$15 - $19,999	18	39	22	21
$20 - $24,999	17	42	21	20
$25 - $34,999	17	36	23	24
≥$35,000	15	43	19	24
Not Reported	26	36	17	21

Definition: Medium or High fat consumption.

Year 2000 Health Objectives for the Nation

One of the Year 2000 Health Objectives for Risk Reduction in the area of Nutrition is to reduce dietary fat intake to an average of 30% of calories or less and average saturated fat intake to less than 10% of calories among people aged 2 and older. Progress toward achieving this objective cannot be measured using BRFS data.

The BRFS questions concern only a limited number of sources of dietary fat and do not address grams of fat intake. Therefore, percent of calories from fat cannot be estimated. Also, the Year 2000 objective is for persons aged 2 and older, while BRFS respondents are aged 18 and older.

FRUIT AND VEGETABLE INTAKE

Risk Summary

Along with a reduction in fat content, current dietary guidelines[5,26,27,29] recommend increased amounts of complex carbohydrates and fiber in the American diet through increased consumption of fruits, vegetables, and whole grains. In addition to their carbohydrates and fiber, vegetables and fruits are rich in many of the vitamins and minerals necessary for good health.

Studies have shown an inverse association between diets high in plant foods and occurences of obesity; coronary heart disease; diabetes; diverticulosis; hypertension; stroke; gallstones; and cancers of the lung, colon, esophagus, stomach, pancreas, prostate, rectum, oral cavity, larynx, breast, cervix, and bladder.[1,5,29] The strongest association has been found between high fiber foods and lower rates of colon cancer.[1]

The specific roles of the protective substances in plant foods are not clear. However, strong evidence suggests that increasing consumption of fruits, vegetables, whole grain products, and other high-fiber plant foods may reduce the chances of developing cancer as well as other chronic diseases.

Current dietary guidelines[27] recommend two or more servings of fruits and three or more servings of vegetables daily. Serving sizes for fruits are defined as 1 medium apple, orange, or banana; 1/2 cup of small or diced fruit; and 3/4 cup of juice. For vegetables, serving sizes are defined as 1 cup of raw, leafy greens and 1/2 cup of other kinds.

1990 BRFS Results

The fruits and vegetables module of the 1990 BRFS was designed to ascertain the frequency of consumption of fruits and vegetables. An index of fruit and vegetable consumption was created by summing the frequency of consumption of food items in the fruits and vegetables module and 1 food item (french fries or fried potatotes) from the fat module.

The index summarizes consumption of fruits and vegetables combined. The summary index approximates the number of daily servings, rather than provides the actual number, because the BRFS questions, with one exception, ask "how often" fruits and vegetables are usually eaten, not "how many servings" are usually eaten, and because portion sizes are not defined.

Survey respondents were considered at risk if they did not eat 5 or more servings of fruits and vegetables, in any combination, daily. Table 23 shows the daily fruit and vegetable consumption of BRFS respondents by demographic characteristics. Overall, 75% of BRFS respondents were eating fewer than 5 servings of fruits and vegetables daily in 1990.

The large number of cells produced by the combination of demographic variables and fruit and vegetable intake categories resulted in cell sizes too small for tests of statistical significance. Therefore, the following information is presented for descriptive purposes only.

Within the servings categories, there was little variation in fruit and vegetable consumption by demographic characteristics. The proportion of respondents who reported eating a given number of servings was similar across all demographic variables. Variation in prevalences was greatest among respondents who reported eating fewer than 3 servings daily, ranging from a low prevalence of 26% among nonwhite females to a high of 40% among nonwhite males.

Combining servings categories to examine the overall prevalence of respondents eating fewer than 5 servings of fruits and vegetables daily shows that respondents at risk were nearly equally likely to be male (78%) as female (72%), white (75%) as nonwhite (77%). Nonwhite males were at greatest risk, 80% of whom reported eating fewer than 5 daily servings. Risk was lowest among white females (71%).

Variations in the consumption of fewer than 5 servings daily by age group and educational attainment category were very small, although the prevalence was highest among people aged 34 or younger (78%). The prevalence was lowest among persons aged 65 or older (72%). Respondents who attended or completed college were least likely to report eating fewer than 5 servings of fruits and vegetables daily (73%). A smaller proportion of high school graduates were at risk (75%) than those who had not completed high school (78%) or who had attended or completed technical school (79%).

The widest variations in prevalence of persons eating fewer than 5 daily servings of fruits and vegetables by demographic characteristics were found in the employment and income variables. Prevalence was highest among the unemployed and students (79%); it was lowest among homemakers (66%) and retired persons (73%).

The highest and lowest prevalences by income were in the middle income categories. Prevalence was highest (81%) among respondents whose incomes were $15,000-$19,999 and lowest (69%) among those whose incomes were $20,000-$24,999. Variation in prevalence among the other income categories was very small, ranging from 74% of those with incomes of $10,000-$14,999 and $25,000-$34,999 to 78% of those with incomes below $10,000.

Adult South Carolinians whose BRFS responses indicated that they were following dietary guidelines in 1990 were somewhat more likely to be white, female, better-educated, middle-income homemakers. Specifically, prevalence was highest among white females (25%); those who attended or completed college (23%) or were high school graduates (21%); homemakers (28%); and those with incomes of $20,000-$24,999 (28%). Lowest prevalences were among nonwhite males (15%); those who did not complete high school (13%); the unemployed (12%); and those whose incomes were below $10,000 (11%).

Age did not appear to be a factor in the prevalence of persons eating 5 or more daily servings of fruits and vegetables.

Table 23
DAILY FRUIT AND VEGETABLE CONSUMPTION BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

	Number of Servings				
Characteristic	0-<1 (%)	1-<3 (%)	3-<5 (%)	≥5 (%)	Unknown (%)
TOTAL	**2**	**32**	**41**	**20**	**5**
Sex					
Male	2	37	39	17	5
Female	2	27	43	22	6
Race					
White	2	32	41	21	4
Nonwhite	4	32	41	15	8
Race-Sex					
White Male	2	36	40	18	4
White Female	1	28	42	25	4
Nonwhite Male	3	40	36	15	6
Nonwhite Female	4	26	45	16	9
Age					
18-24	4	36	38	21	1
25-34	2	39	37	18	4
35-44	2	30	42	21	5
45-54	1	29	43	20	7
55-64	2	25	47	18	8
≥65	4	25	43	19	9
Education					
< High School	4	35	39	13	9
High School Grad	2	32	41	21	4
Some Tech Sch/Grad	3	37	39	16	5
Some College/Grad	1	29	43	23	4
Employment					
Employed	2	35	39	20	4
Unemployed	1	34	44	12	9
Homemaker	1	20	45	28	6
Student	1	36	42	20	1
Retired	3	25	45	18	9
Income					
< $10,000	4	33	41	11	11
$10 - $14,999	3	35	36	21	5
$15 - $19,999	2	33	46	16	3
$20 - $24,999	1	30	38	28	3
$25 - $34,999	1	36	37	22	4
≥$35,000	1	33	43	19	4
Not Reported	3	25	44	20	8

Definition: Consumption of fewer than 5 servings daily.

Year 2000 Health Objectives for the Nation

One of the Year 2000 Health Objectives for Risk Reduction in the area of Nutrition is to increase complex carbohydrate and fiber-containing foods in the diets of all adults to 5 or more daily servings of vegetables and fruits, and to 6 or more daily servings of grain products. South Carolinians fall far below this objective, with only 20% of adults eating five or more daily servings of fruits and vegetables in 1990. The 1990 BRFS did not measure the consumption of grain products.

SEAT BELT NON-USE

Risk Summary

Motor vehicle accidents are the fourth leading cause of death in the United States,[30] accounting for one third of all fatal injuries.[31] They are the leading cause of death among U.S. children under five years of age.[32] Adolescents and young adults (15-24 years of age) are at highest risk of both fatal and non-fatal motor-vehicle-related injuries.[31]

In South Carolina, motor vehicle accidents accounted for nearly 60% of all accidents in 1990, and were the fifth leading cause of death in the state. Of the 1,655 deaths due to accidents, 938 resulted from motor-vehicle-related accidents.[33]

According to the National Highway Traffic Administration, seat belts can cut the risk of death by 45% and the risk of moderate to critical injuries by 50%.[34] Between 1983 and 1989 seat belt use saved over 20,000 lives and prevented more than 500,000 moderate to critical injuries.[35]

Despite the life-saving potential of seat belt usage, of the 724 persons killed in South Carolina in motor vehicle accidents in 1990 (for whom restraint usage was known), 72% were not wearing seat belts. Of the 5,400 motor vehicle occupants who suffered incapacitating injuries, 49% were unrestrained, and 39% of those suffering non-incapacitating injuries were unrestrained. Among motor vehicle occupants involved in traffic accidents but not injured, 87% were using seat belts.[36]

1990 BRFS Results

Survey respondents were considered at risk if they reported that they sometimes, seldom, or never use seat belts when they drive or ride in a car. Table 24 presents the prevalence of seat belt non-use by demographic characteristics. The overall prevalence of seat belt non-use in 1990 was 14%. Statistically significant differences in seat belt non-use were found in the following variables:

Sex: The prevalence of seat belt non-use was 1.5 times higher for men (17%) than that for women (11%).

Race-Sex: White females had the lowest rate of non-use (10%), while white males had the highest (17%). Prevalences for non-white males and females were about the same, 16% for males and 14% for females.

Education: Seat belt usage increased with educational attainment. Prevalence of non-use was highest (20%) among those who had less than a high school education and lowest (9%) among those who had attended or graduated from college.

Differences in seat belt non-use by race, age, employment, and income were not statistically significant.

Table 24
PREVALENCE OF SEAT BELT NON-USE BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**14**		
Sex		**Race**	
Male	17	White	14
Female	11	Nonwhite	15
Race-Sex		**Age**	
White Male	17	18-24	15
White Female	10	25-34	16
Nonwhite Male	16	35-44	13
Nonwhite Female	14	45-54	14
		55-64	14
		≥65	11
Education		**Employment**	
< High School	20	Employed	16
High School Grad	16	Unemployed	12
Some Tech Sch/Grad	11	Homemaker	9
Some College/Grad	9	Student	9
		Retired	12
Income			
< $10,000	16		
$10 - $14,999	17		
$15 - $19,999	11		
$20 - $24,999	18		
$25 - $34,999	10		
≥$35,000	13		
Not Reported	14		

Definition: Sometimes, seldom, or never use seat belts when driving or riding in a car.

South Carolina began seriously debating and promoting mandatory use of seat belts in 1985. A mandatory seat belt usage law became effective July 1, 1989, with penalties to be imposed as of January 1, 1990. During the five-year period from debate to passage of South Carolina's seat belt law, seat belt non-use declined steadily.[37]

The imposition of penalties as of 1990 appears to have had considerable impact on seat belt use in the state. In 1990, South Carolina recorded the lowest highway death rate in the state's history, and only 15.1% of all motor vehicle occupants involved in traffic accidents were unrestrained.[36] This figure is comparable to the 14% of 1990 BRFS survey respondents who reported non-use of seat belts.

A pairwise comparison was performed to examine associations between seat belt non-use and other risk factors. Table 25 shows the percentage of other risk factors present among seat belt non-users compared to users. Statistically significant associations were found between seat belt non-use and the following health risk behaviors: smoking, overweight, sedentary life-style, and chronic drinking.

Table 25
PERCENTAGE OF RESPONDENTS WITH OTHER RISK FACTORS BY SEAT BELT USE
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Other Risk Factors	Does Not Use Seat Belts	Uses Seat Belts
Smoking	38	23
Hypertension	19	17
Overweight	30	24
Sedentary Life-Style	76	68
Chronic Drinking	4	2
High Blood Cholesterol	13	9

Note: Percentages based on unweighted data.

Year 2000 Health Objectives for the Nation

There are two Year 2000 Health Objectives related to seat belt use. The Services and Protection Objective is to extend to 50 states laws requiring safety belt use for all ages. As of early 1990, 33 states, including South Carolina, had enacted mandatory seat belt use laws for adults and all 50 states had enacted mandatory child safety seat laws.[34] South Carolina has achieved this objective.

The Risk Reduction Objective is to increase use of occupant protection systems, such as safety belts, inflatable safety restraints, and child safety seats, to at least 85 percent of motor vehicle occupants. It appears that this objective has been achieved in South Carolina. Since 14% of the 1990 BRFS respondents reported non-use of seat belts, 86% apparently always or nearly always used them. Highway Department data indicate an 85 percent compliance rate with the South Carolina Child Restraint Law.[36]

CHRONIC DRINKING

Risk Summary

Alcohol misuse or abuse contributes to 4 of the 10 leading causes of death in the United States: cirrhosis of the liver, accidents (including motor vehicle), suicide, and homicide.[5] It is involved in almost half of all motor-vehicle-accident deaths, suicides, and homicides; one third of victims of homicides, drownings, and boating accidents are intoxicated.[1] Alcohol abuse also increases the risk for diseases of the heart and nervous system as well as for reproductive disorders.[5]

Chronic alcohol abuse contributes to the development of several types of cancer, including liver, oral, and esophageal, among others.[5] It is the primary contributor to chronic liver disease and cirrhosis, which is the 9th leading cause of death in the United States, accounting for 26,409 deaths and almost 110,000 years of potential life lost in 1988.[7] In 1990, chronic liver disease and cirrhosis caused 355 deaths in South Carolina and ranked 11th among the causes of death in the state.[33]

Estimates of alcohol-related mortality in the United States increased from 69,180 in 1980 to 105,095 in 1987, a 52% increase. Of the alcohol-related deaths in 1987, 29% were from unintentional injuries, 19% were from intentional injuries, 19% were from digestive diseases, and 16% were from cancers.[38]

In South Carolina in 1990, alcohol or drug use was the probable cause of 6% of all traffic accidents; 10% of traffic accident injuries; 23% of all fatal traffic accidents; and 23% of all traffic accident fatalities.[36] However, because only a single probable cause can be indicated on the Uniform Traffic Accident Report form by the investigating officer, the Highway Department suggests that alcohol involvement in South Carolina traffic accidents is probably understated.

By South Carolina state law, Blood Alcohol Concentration (BAC) is determined for all drivers and pedestrians over 16 years of age who die within 4 hours from injuries received in a traffic accident. Of those for whom BAC was determined in 1989, 60% were under the influence of alcohol (BAC ≥0.10%).[36]

1990 BRFS Results

Survey respondents were considered at risk if they reported having 60 or more drinks during the past month. Table 26 shows the prevalence of chronic drinking by demographic characteristics. The overall prevalence of chronic drinking in 1990 was 3%. Statistically significant differences in chronic drinking were found in the following variables:

Sex: According to reported data, chronic drinking is a male problem. Less than 1% of females reported chronic drinking, whereas 5% of males reported having had 60 or more drinks during the past month.

Race-Sex: Regardless of race, chronic drinking was reported essentially only by males. The prevalence of chronic drinking for both white and nonwhite males was 5%. Less than 1% of females--regardless of race--reported chronic drinking.

Employment: Although the chi-square test on the association between employment and chronic drinking was significant, due to extremely small sample size (<5), the inferred association may be invalid. Data are insufficient to provide conclusive evidence of a significant association between chronic drinking and employment.

Differences in chronic drinking prevalence by race, age, education, and income were not statistically significant.

Table 26
PREVALENCE OF CHRONIC DRINKING BY DEMOGRAPHIC CHARACTERISTICS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**3**		
Sex		**Race**	
Male	5	White	3
Female	0.1	Nonwhite	2
Race-Sex		**Age**	
White Male	5	18-24	3
White Female	0.1	25-34	3
Nonwhite Male	5	35-44	3
Nonwhite Female	0	45-54	3
		55-64	1
		≥65	1
Education		**Employment**	
< High School	2	Employed	3
High School Grad	2	Unemployed	6
Some Tech Sch/Grad	6	Homemaker	0
Some College/Grad	3	Student	2
		Retired	1
Income			
< $10,000	2		
$10 - $14,999	2		
$15 - $19,999	2		
$20 - $24,999	3		
$25 - $34,999	3		
≥$35,000	4		

Definition: 60 or more drinks during the past month.

A pairwise comparison was performed to examine associations between chronic drinking and other risk factors. Table 27 presents the percentage of other risk factors present among those who reported chronic drinking compared to those who did not. Statistically significant associations were found between chronic drinking and the following health risk behaviors: smoking and seat belt non-use.

Table 27
PERCENTAGE OF RESPONDENTS WITH OTHER RISK FACTORS
BY CHRONIC DRINKING STATUS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Other Risk Factors	Chronic Drinker	Not a Chronic Drinker
Smoking	49	24
Seat Belt Non-Use	21	13
Hypertension	9	18
Overweight	16	25
Sedentary Life-Style	63	69
High Blood Cholesterol	10	15

Note: Percentages based on unweighted data.

Year 2000 Health Objectives for the Nation

The Year 2000 Health Objectives include Health Status, Risk Reduction, and Services and Protection objectives related to alcohol and other drugs. One addresses alcohol consumption: Reduce alcohol consumption by people aged 14 and older to an annual average of no more than 2 gallons of ethanol per person. As stated, achievement of this objective cannot be measured using BRFS data.

BREAST CANCER SCREENING

Risk Summary

Breast cancer is the most common cancer in women and the second major cause of deaths among women. The American Cancer Society estimates that there were 175,000 new cases of breast cancer and 44,500 breast cancer deaths among women in the United States in 1991.[39] Breast cancer mortality increases with age, and death rates from the disease are higher among black women than among white women.[40]

Risk factors for breast cancer include being over age 50, family history, never having had children, first childbirth after age 30,[39] and a high-fat diet.[26] Approximately 1 out of 9 women will develop breast cancer.[39] Women whose mothers or sister(s) have had breast cancer have about twice the average risk and women whose mothers and sister(s) have had the disease have three times the average risk.[41]

Research indicates that breast cancer mortality can be reduced by early detection through screening which includes a combination of breast physical examination and mammography. Reduction estimates range from 10% to 60% depending on a woman's age, her specific screening program, and the source of the estimates.[41] For women over age 50, the estimated reduction is 30%.[1]

There is still some uncertainty about the appropriate frequency of screening for women of different ages and risk levels. However, the American Cancer Society recommends a breast physical examination every 3 years for women aged 20-40; a breast physical examination every year for women over age 40; a baseline mammogram for asymptomatic women aged 35-39; a mammogram every 1-2 years for asymptomatic women aged 40-49; and a mammogram every year for asymptomatic women aged 50 and older.[39]

Breast cancer survival rates underscore the importance of early detection. According to the American Cancer Society, the 5-year survival rate for localized breast cancer is 91%; if the cancer is not invasive, the rate approaches 100%. However, if the cancer has spread regionally, the survival rate drops to 69%, and if the cancer has spread to distant parts of the body, the rate drops dramatically to 18%.[39]

Despite the importance of early detection of breast cancer, the results of a 1990 survey showed that less than one third (31%) of U.S. women ≥40 years old were following screening guidelines.[42] It has been estimated that at least 19% of female breast cancer mortality in this country can be attributed to non-use of mammography screening.[40]

1990 BRFS Results

Female survey respondents were considered at risk if they had never had a breast physical examination or a mammogram. Table 28 shows the percentage of female respondents who have ever had a breast physical examination by demographic characteristics. Overall, 92% of 1990 BRFS respondents had had a breast physical exam at least once. Among women who had had a breast physical examination at some time in their lives, statistically significant differences were found in the following variables:

Age: Virtually all women 40-49 years old (99%) had had at least one breast physical exam in their lives. A slightly lower percentage (89%) of women aged 50 or older had had one. Prevalence was lowest (80%) among women under 20 years of age.

Education: Women who attended or completed college were only slightly more likely to have had a breast physical exam (97%) than high school graduates (93%). The proportion of women who had had a breast physical exam was smallest among those who had less than a high school education.

Employment: Over 90% of employed women and homemakers reported having had a breast physical exam, while 89% of students and 87% of unemployed women had had one. The proportion of women who had had a breast physical exam was lowest (85%) among retired women.

Income: The likelihood of having had a breast physical exam increased with income. Nearly all women with incomes of $15,000 or more had had one (range 94% to 98%). Prevalence was lowest among those whose incomes were less than $10,000.

Among women who had ever had a breast physical examination, differences by race were not statistically significant.

Table 28
PERCENTAGE OF FEMALE RESPONDENTS WHO HAVE EVER HAD A BREAST PHYSICAL EXAMINATION BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**92**		
Race		**Education**	
White	93	< High School	83
Nonwhite	90	High School Grad	93
		Some Tech Sch/Grad	92
		Some College/Grad	97
Age		**Employment**	
<20	80	Employed	94
20-39	94	Unemployed	87
40-49	95	Homemaker	93
≥50	89	Student	89
		Retired	85
Income			
< $10,000	79		
$10 - $14,999	89		
$15 - $19,999	94		
$20 - $24,999	95		
$25 - $34,999	96		
≥$35,000	98		
Not Reported	91		

Definition: Never had a breast physical examination.

Women who had ever had a breast physical exam were asked how long it had been since their last exam. The results are presented by demographic characteristics in Table 29. The large number of cells produced by the combination of demographic variables and response variables resulted in cell sizes too small to perform tests of statistical significance. Therefore, the following information is for descriptive purposes only.

Regardless of demographic variable, the majority of respondents had had a breast physical exam within the past year. Overall, 76% had had an exam within the past year. Another 13% had had an exam within the past 2 years, and 5% had had an exam within the past 5 years. Only 5% had had their last breast physical exam more than 5 years ago.

There was essentially no difference by race, and little variation by age group, in time since last breast physical exam. Women aged 20-39 were the most likely to have had their last exam within the past year (80%), but women in the other age categories were almost as likely (range 72%-77%).

Generally, as educational attainment increased, the proportion of women having had a breast physical exam within the past year also increased. Prevalence was highest among those who had attended or completed technical school (84%) and lowest among those with less than a high school education (68%).

Employment status appeared to have some effect on time since last breast physical exam, as the proportions of women having had an exam within the past 1 or 2 years were lowest among the unemployed (80%) and retirees (82%). Prevalence was highest among students (97%).

Women in the middle income categories were more likely to have had a breast physical exam within the past year than those in either the lower or higher income categories. The proportion was highest among those whose incomes were between $15,000 and $24,999 (range 81%-86%). There was essentially no difference in time since last exam between women with incomes of $10,000-$14,999 and those with incomes of $35,000 or more (75% and 77%, respectively).

Differences by income category narrowed somewhat for women who had had a breast physical exam within the past 1 or 2 years (more than 90% of women with incomes of $15,000), and narrowed further for women who had had an exam within the past 1, 2, or 5 years. Altogether, 95% or more of women with incomes of $10,000 or more had had a breast physical exam within the past 5 years. Women with incomes under $10,000 were the most likely to have not had an exam in more than 5 years (9%).

Table 29
TIME SINCE LAST BREAST PHYSICAL EXAMINATION FOR WOMEN WHO HAVE EVER HAD A BREAST PHYSICAL EXAMINATION BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Within Past Year (%)	Within Past 2 Years (%)	Within Past 5 Years (%)	More Than 5 Years (%)
TOTAL	**76**	**13**	**5**	**5**
Race				
White	76	15	5	4
Nonwhite	78	12	4	6
Age				
<20	77	15	1	6
20-39	80	13	4	2
40-49	76	12	5	7
≥50	72	15	5	7
Education				
< High School	68	18	6	5
High School Grad	76	13	4	6
Some Tech Sch/Grad	84	10	2	5
Some College/Grad	80	12	5	3
Employment				
Employed	79	12	4	4
Unemployed	68	12	8	7
Homemaker	78	15	5	2
Student	88	9	3	0
Retired	66	17	6	10
Income				
< $10,000	70	15	4	9
$10 - $14,999	75	14	6	6
$15 - $19,999	81	11	3	4
$20 - $24,999	86	10	2	2
$25 - $34,999	79	12	5	4
≥$35,000	77	15	4	5
Not Reported	70	16	7	5

Note: Percentages do not add to 100 due to persons who refused to answer or did not know the answer to the question.

Table 30 gives the percentage of female respondents who have never had a breast physical examination by demographic characteristics. Overall, 7% of 1990 BRFS respondents had never had a breast physical exam. Among women who had never had a breast physical exam, statistically significant differences were found in the following variables:

Age: The likelihood of never having had a breast physical exam decreased with age, from 19% among women under the age of 20 to 3% among women 40-49 years of age. Women aged 50 or older were somewhat more likely to have not had a breast physical exam (8%) than women aged 20 to 49 (5% for women aged 20-39; 3% for women aged 40-49).

Education: As educational attainment increased, the likelihood of never having had a breast physical exam decreased. High school graduates were half as likely to have not had one (6%) as women with less than a high school education (14%). Women who attended or completed college were the least likely to have never had a breast physical exam (3%).

Employment: Likelihood of never having had a breast physical exam was highest among the unemployed (13%), followed by students (11%), and retired women (10%). Least likely to have never had a breast physical exam were employed women (5%).

Income: As income increased, the likelihood of never having had a breast physical exam decreased. While 18% of women with incomes under $10,000 had never had an exam , only 4% of women with incomes of $35,000 or more had never had a breast physical exam.

Among women who had never had a breast physical exam, differences by race were not statistically significant.

Table 30
PERCENTAGE OF FEMALE RESPONDENTS WHO HAVE NEVER HAD A BREAST PHYSICAL EXAMINATION BY DEMOGRAPHIC CHARACTERISTICS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	7		
Race		**Education**	
White	6	< High School	14
Nonwhite	8	High School Grad	6
		Some Tech Sch/Grad	5
		Some College/Grad	3
Age		**Employment**	
<20	19	Employed	5
20-39	5	Unemployed	13
40-49	3	Homemaker	6
≥50	8	Student	11
		Retired	10
Income			
< $10,000	18		
$10 - $14,999	11		
$15 - $19,999	6		
$20 - $24,999	5		
$25 - $34,999	4		
≥$35,000	1		
Not Reported	6		

Table 31 shows the percentage of female respondents who have ever had a mammogram by demographic characteristics. Overall, 45% of 1990 female respondents had had at least one mammogram. Among women who had had a mammogram at some time in their lives, statistically significant differences were found in the age and employment variables:

Age: Women over 40 years of age were almost three times as likely (65%) to have had a mammogram at some time than women under 40 (22%).

Employment: Students (9%) and unemployed women (23%) were the least likely to have had a mammogram. Over half the women who were retirees (57%) or homemakers (51%) had had a mammogram at some time in their lives.

Among women who had ever had a mammogram, differences by race, education, and income were not statistically significant.

Table 31
PERCENTAGE OF FEMALE RESPONDENTS WHO HAVE EVER HAD A MAMMOGRAM BY DEMOGRAPHIC CHARACTERISTICS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**45**		
Race		**Education**	
White	47	< High School	44
Nonwhite	39	High School Grad	45
		Some Tech Sch/Grad	55
		Some College/Grad	43
Age		**Employment**	
≤39	22	Employed	43
40-49	65	Unemployed	23
≥50	65	Homemaker	51
		Student	9
		Retired	57
Income			
< $10,000	36		
$10 - $14,999	48		
$15 - $19,999	46		
$20 - $24,999	42		
$25 - $34,999	40		
≥$35,000	50		
Not Reported	47		

Women who had ever had a mammogram were asked how long it had been since their last mammogram. The results are presented by demographic characteristics in Table 32. The large number of cells produced by the combination of demographic variables and response variables resulted in cell sizes too small for tests of statistical significance. Therefore, the following information is for descriptive purposes only.

Overall, two thirds (66%) of the women who had ever had a mammogram had had one within the past year. Another 19% had had one within the past 2 years, and 7% had had one within the past 5 years. Only 5% had had their last mammogram more than 5 years ago. There was essentially no difference in time since last mammogram by race.

Percentage distributions by age were quite similar to those for the overall sample. Women aged 40-49 were the most likely to have had their last mammogram within the past year (71%). For women ≥50 years of age, the percentage was 69%; for those aged 39 or younger, the percentage was 55%.

Regardless of educational attainment, employment status, or income category, the majority of respondents had had a mammogram within the past year. Among women who had attended or completed college, 71% had had one within the past year; the lowest percentage (20%) was among those with less than a high school education.

The distribution of women who had had a mammogram within the past year by employment status ranged from a low prevalence of 64% to a high prevalence of 82%. The largest percentage was among students (82%), followed by women who were unemployed (74%). Over two thirds of women who were employed, homemakers, or retired also had had an exam within the past year (range 64% for retired to 68% for homemakers).

Women earning $20,000-$34,999 were most likely to have had a mammogram within the past year (range 72% to 77%), while those earning <$10,000-$14,999 were the least likely (range 53% to 64%). However, differences by income level narrowed substantially for women who had had a mammogram within the past 1 or 2 years (range of 81% for those with incomes of $15,000-$19,999 to 93% for those with incomes of $25,000-$34,999).

Table 32
TIME SINCE LAST MAMMOGRAM FOR WOMEN WHO HAVE EVER HAD A MAMMOGRAM BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Within Past Year (%)	Within Past 2 Years (%)	Within Past 5 Years (%)	More Than 5 Years (%)
TOTAL	**66**	**19**	**8**	**5**
Race				
White	67	19	7	6
Nonwhite	66	20	8	4
Age				
≤39	55	22	14	8
40-49	71	22	6	1
≥50	69	17	6	6
Education				
< High School	20	20	9	6
High School Grad	68	22	5	5
Some Tech Sch/Grad	57	25	5	12
Some College/Grad	71	15	11	3
Employment				
Employed	66	19	9	6
Unemployed	74	11	9	0
Homemaker	68	23	5	2
Student	82	18	0	0
Retired	64	18	7	8
Income				
< $10,000	64	18	6	8
$10 - $14,999	53	29	15	2
$15 - $19,999	66	15	9	10
$20 - $24,999	77	9	2	11
$25 - $34,999	72	21	5	2
≥$35,000	61	23	11	4
Not Reported	72	17	5	3

Note: Percentages do not add to 100 due to persons who refused to answer or did not know the answer to the question.

Table 33 gives the percentage of female respondents who have never had a mammogram by demographic characteristics. Overall, 54% had never had a mammogram. Among women who had never had a mammogram, statistically significant differences were found in the age and employment variables:

Age: The likelihood of never having had a mammogram decreased with age, from 77% among women 39 years of age or younger to 30% among women 50 years of age or older.

Employment: Women who were students or unemployed were most likely to have never had a mammogram (93% and 76%, respectively). Over half the women who were employed (56%) had never had a mammogram. Prevalences were lowest among homemakers (48%) and retired women (36%).

Among women who had never had a mammogram, differences by race, education, and income were not statistically significant.

Table 33
PERCENTAGE OF FEMALE RESPONDENTS WHO HAVE NEVER HAD A MAMMOGRAM BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**54**		
Race		**Education**	
White	52	< High School	51
Nonwhite	57	High School Grad	53
		Some Tech Sch/Grad	45
		Some College/Grad	56
Age		**Employment**	
≤39	77	Employed	56
40-49	35	Unemployed	76
≥50	30	Homemaker	48
		Student	93
		Retired	36
Income			
< $10,000	59		
$10 - $14,999	52		
$15 - $19,999	52		
$20 - $24,999	57		
$25 - $34,999	60		
≥$35,000	50		
Not Reported	47		

Women who had never had a mammogram were asked to give the most important reason for not having had one. The results are presented by demographic characteristics in Table 34. The large number of cells produced by the combination of demographic variables and response variables resulted in cell sizes too small for tests of statistical significance. Therefore, the following information is for descriptive purposes only.

Of those who had never had a mammogram, the most important reason given by a majority of respondents (58%) was that it was not recommended by a doctor. This was the case across all demographic variables. The second most frequently reported reason was that a mammogram was not needed. This was the most important reason given by one fourth or more of women whose income was $10,000-$14,999 (27%) and technical school attendees or graduates (25%).

Very small percentages of women gave cost or lack of insurance as the most important reason for never having had a mammogram. The highest percentage for these two reason-responses was among women with incomes of $10,000-$14,999, 8% of whom gave cost as the most important reason. Practically none of the women reported that they had never heard of a mammogram.

Those who responded that a mammogram was not recommended by a doctor were most likely to be ≤39 years old (65%). However, half (51%) of the respondents ≥50 years old also said that a mammogram had not been recommended by a doctor.

As educational attainment increased, larger proportions of respondents reported that a mammogram had not been recommended. The range was from 48% among those with less than a high school education to 67% among those who attended or graduated from college. The proportion of women responding that a mammogram was not needed was the same (11%) for both those with the least education (< high school) and those with the most education (some college/grad). The percentage giving this reason was higher but also similar among high school graduates (20%) and those who had attended or completed technical school (25%).

Responses by employment variable show that the proportion of respondents who said that a mammogram had not been recommended by a doctor was highest among students (69%) and lowest among retirees (49%). Cost was cited as the most important reason for not having had a mammogram by unemployed women (8%) more often than women in any other employment category, while homemakers and retirees were most likely (3%) to give lack of insurance as the most important reason.

The percentage of respondents giving cost or lack of insurance as the most important reason for never having had a mammogram generally decreased as income increased. Cost was cited most often by those with incomes <$15,000; lack of insurance was cited most often by those with incomes <$10,000.

Table 34
MOST IMPORTANT REASON FOR NOT HAVING A MAMMOGRAM FOR WOMEN WHO HAVE NEVER HAD A MAMMOGRAM BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Never Heard of (%)	Not Recom. by Dr. (%)	Not Needed (%)	Cost (%)	No Insur. (%)	Other (%)
TOTAL	**1**	**58**	**15**	**3**	**2**	**9**
Race						
White	1	60	15	3	2	9
Nonwhite	0.3	54	15	4	1	9
Age						
≤39	1	65	14	2	1	8
40-49	0	28	19	7	3	20
≥50	0	51	16	4	4	8
Education						
< High School	0	48	11	7	3	9
High School Grad	1	55	20	3	2	8
Some Tech Sch/Grad	0	61	25	0	0	12
Some College/Grad	1	67	11	2	0	10
Employment						
Employed	1	57	16	3	1	10
Unemployed	0	53	16	8	1	8
Homemaker	1	67	11	4	3	3
Student	0	69	9	3	1	8
Retired	0	49	19	1	3	11
Income						
< $10,000	0	49	11	6	3	11
$10 - $14,999	1	43	27	8	1	10
$15 - $19,999	0	68	14	2	0	6
$20 - $24,999	1	53	22	1	2	16
$25 - $34,999	0	66	10	2	2	7
≥$35,000	1	66	13	0	0	9
Not Reported	0	57	13	3	2	4

Note: Percentages do not add to 100 due to persons who refused to answer or did not know the answer to the question.

Year 2000 Health Objectives for the Nation

The Year 2000 Health Objective for breast cancer screening is in two parts. The first is to increase to at least 80% the proportion of women aged 40 and older who have ever received a clinical breast examination and a mammogram. The second part is to increase to at least 60% the proportion of women aged 50 and older who have received a clinical breast examination and a mammogram within the preceding 1 to 2 years.

Aggregation of data on female South Carolina BRFS respondents aged 40 and older who have ever had both a physical breast exam and a mammogram (data not shown) results in a 1990 prevalence of 62%, approximately 20% below the Year 2000 objective. Similar aggregation of data on female BRFS respondents aged 50 and older who have received both a clinical breast examination and a mammogram within the preceding 1 to 2 years (data not shown) results in a South Carolina prevalence of 54%, which is about 25% below the Year 2000 objective.

CERVICAL CANCER SCREENING

Risk Summary

Cervical cancer has declined dramatically in the United States over the past 40 years. Mortality dropped approximately 70% from 1947 to 1984[43] and 18% from 1979 to 1986.[44] In 1989, there were 4,487 cervical cancer deaths in this country, representing 2% of all cancer deaths among women.[45] The American Cancer Society estimates that there were 4,500 cervical cancer deaths in 1991.[39]

The two most important risk factors associated with cervical cancer are early age at first intercourse and number of sex partners. Other risk factors include use of oral contraceptives, smoking, and socioeconomic status. The risk for women in the lowest social classes (regardless of race) is about 5 times that of women in the highest classes.[46]

Despite the significant downward trend in cervical cancer, the rates for black women remain more than double those for white women.[43,47,48] The 1988 incidence rate (per 100,000) for black women was 15.4 compared to 7.7 for white women;[7] the 1989 death rate was 6.5 for black women compared to 3.1 for white women.[45] Based on three years of data in the mid-80s, South Carolina ranked first among the states in average annual deaths from cervical cancer.[47]

Early detection through Pap test screening can reduce the incidence of cervical cancer by 60%-90%[49] and prevent virtually all cervical cancer deaths.[43] The American Cancer Society recommends annual Pap tests beginning with the onset of sexual activity or at age 18; after three consecutive negative tests, screening may be done less frequently at the discretion of the woman's physician.[39]

The overall 5-year survival rate for cervical cancer is 67%. If diagnosed early, the survival rate increases to 88%, and if the disease is localized, the rate is virtually 100%.[39] The effectiveness of screening is directly related to the interval between Pap tests.[48,49,50] Therefore, it is important for all women to comply with ACS guidelines to assure early detection.

1990 BRFS Results

Female survey respondents were considered at risk if they had never had a Pap test. Table 35 gives the percentage of female respondents who have ever had a Pap test by demographic characteristics. Overall, 94% had had a Pap test. Among women who had ever had a Pap test, statistically significant differences were found in the following variables:

Age: Women aged 18-24 and ≥65 were somewhat less likely to have had a Pap test than women in the other age groups. Prevalence was lowest among those 18-24 years old (83%). Virtually all women 35-44 years of age (99%) had had a Pap test. Prevalences for women 25-34 and 45-64 were only slightly lower (96% and 97%, respectively).

Education: Regardless of whether or not they had attended or completed college, women who had finished high school were nearly 5 times more likely to have had a Pap test. Only 20% of women who had not finished high school had had a Pap test, while over 90% of the women in the other educational attainment categories had had one.

Employment: Except for students, there was little difference in prevalence by employment category. About two thirds (65%) of students had had a Pap test compared to over 90% of the women in each of the other categories. Prevalence was highest (98%) among homemakers.

Income: Except for women in the lowest income category (under $10,000), there was little variation in prevalence by income. Over 90% of women whose incomes were at least $10,000 had had a Pap test. A slightly smaller proportion (86%) of those with incomes under $10,000 had had one.

Among women who had ever had a Pap test, differences by race were not statistically significant.

Table 35
PERCENTAGE OF FEMALE RESPONDENTS WHO HAVE EVER HAD A PAP TEST BY DEMOGRAPHIC CHARACTERISTICS
SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Percent	Characteristic	Percent
TOTAL	**94**		
Race		**Education**	
White	94	< High School	20
Nonwhite	92	High School Grad	94
		Some Tech Sch/Grad	96
		Some College/Grad	95
Age		**Employment**	
18-24	83	Employed	96
25-34	96	Unemployed	94
35-44	99	Homemaker	98
45-54	97	Student	65
55-64	97	Retired	90
≥65	89		
Income			
< $10,000	86		
$10 - $14,999	96		
$15 - $19,999	93		
$20 - $24,999	94		
$25 - $34,999	97		
≥$35,000	97		
Not Reported	93		

Women who had ever had a Pap test were asked how long it had been since their last test. The results are presented by demographic characteristics in Table 36. The large number of cells produced by the combination of demographic variables and response variables resulted in cell sizes too small for tests of statistical significance. Therefore, the following information is for descriptive purposes only.

Table 36
TIME SINCE LAST PAP TEST FOR WOMEN WHO HAVE EVER HAD A PAP TEST BY DEMOGRAPHIC CHARACTERISTICS SOUTH CAROLINA BEHAVIORAL RISK FACTOR SURVEY, 1990

Characteristic	Within Past Year (%)	Within Past 2 Years (%)	Within Past 5 Years (%)	More Than 5 Years (%)
TOTAL	**72**	**13**	**6**	**8**
Race				
White	71	14	6	8
Nonwhite	75	11	5	7
Age				
18-24	86	12	1	0
25-34	76	13	6	3
35-44	77	13	6	4
45-54	71	14	6	8
55-64	69	13	5	13
≥65	53	12	8	23
Education				
< High School	59	13	8	17
High School Grad	75	13	5	7
Some Tech Sch/Grad	75	16	6	3
Some College/Grad	77	13	5	4
Employment				
Employed	77	12	5	5
Unemployed	77	11	3	9
Homemaker	71	16	9	3
Student	87	9	0	3
Retired	55	13	6	23
Income				
< $10,000	62	10	6	18
$10 - $14,999	71	15	6	7
$15 - $19,999	71	18	4	5
$20 - $24,999	81	10	6	2
$25 - $34,999	78	10	6	5
≥$35,000	75	15	3	6
Not Reported	69	12	6	10

Note: Percentages do not add to 100 due to persons who refused to answer or did not know the answer to the question.

Nearly three quarters (72%) of the women who had ever had a Pap test had had the test within the past year. This was the most frequently given response across all demographic variables. There was essentially no difference between white (71%) and nonwhite respondents (75%), but the proportion generally decreased with age, from a high of 86% among those aged 18-24 to a low of 53% among those ≥65 years of age.

The percentage distribution of those whose last Pap test had been within the past 2 years was similar across age groups; this was also true for those whose last Pap test had been within the past 5 years. However, the proportion of women who responded that their last Pap test had been more than 5 years ago increased with age, from 3% for women aged 25-34 to 23% for women ≥65 years old.

Women with less than a high school education were least likely to have had a Pap test within the past year (59%) and most likely to report that their last test was more than 5 years ago (17%). At least three quarters of women with a high school education or more (75%-77%) had had a Pap test within the past year; about 90% had had one within the past 2 years.

Except for the retired, prevalences of having had a Pap test within the past year or 2 were similar across employment status categories. Prevalence was highest for students: 87% within the past year and 96% within the past 2 years. Prevalence was lowest among the retired: 55% within the past year and 68% within the past 2 years. Retired women were more likely than women in the other employment categories to report that their last Pap test was more than 5 years ago. Almost one fourth (23%) of retired women had not had a Pap test within the past 5 years.

Generally, time since last Pap test decreased with increased income. The lowest percentage of Pap tests within the past year was among women whose income was <$10,000 (62%). Conversely, this group had the highest percentage of Pap tests more than 5 years ago (18%). The highest percentage of Pap tests within the past year (81%) and lowest percentage more than 5 years ago (2%) were reported by women in the $20,000-$24,999 income category.

Year 2000 Health Objectives for the Nation

The Year 2000 Health Objective for cervical cancer screening is in two parts. The first is to increase to at least 95% the proportion of women aged 18 and older with uterine cervix who have ever received a Pap test. The second part is to increase to at least 85% the proportion of women aged 18 and older with uterine cervix who have received a Pap test within the preceding 1 to 3 years.

1990 BRFS results indicate that South Carolina is within 1% of achieving the first part of the Year 2000 objective, as 94% of women aged 18 and older had had at least one Pap test in their lives. BRFS results cannot be used to measure progress toward achieving the second part of the Year 2000 objective because the categories of time since last Pap test in the BRFS (within the past 1, 2, or 5 years) do not correspond with the time period stated in the Year 2000 objective (within 1 to 3 years). BRFS data do show that 85% of women aged 18 and older (data not shown) had had a Pap test within the past 5 years.

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APPENDIX

1990 Behavioral Risk Factor Questionnaire

FIPS STATE CODE	STRATUM CODE	PSU NUMBER	RECORD NUMBER	DATE OF INTERVIEW MM DD YY	ID
☐☐	☐	☐☐☐☐☐	☐	☐☐ ☐☐ ☐☐	☐☐
(1-2)	(3)	(4-8)	(9)	(10-15)	(16-17)

HELLO. I'm ____________________ calling for the ______________________________. We're doing a study of the health practices of ____________________ residents. Your number has been chosen randomly by the ______________________________ to be included in the study, and we'd like to ask some questions about things people do which may affect their health.

Is this ☐☐☐ (18-20) Area Code ☐☐☐ (21-23) Prefix ☐☐ (24-25) Suffix ___ ___

No → *Thank you very much, but I seem to have dialed the wrong number. It's possible that your number may be called at a later time.* STOP

Is this a private residence?

No → *Thank you very much, but we are only interviewing in private residences.* STOP

⊘ *Line busy*

● *No answer*

Date		Time		Time		Time		Time	ID	Comments
____	○	____	○	____	○	____	○	____	___	
____	○	____	○	____	○	____	○	____	___	
____	○	____	○	____	○	____	○	____	___	
____	○	____	○	____	○	____	○	____	___	
____	○	____	○	____	○	____	○	____	___	

Appointments:

	Today's date/time	Spoke with	Ask for	Call-back date & time	ID	Comments
1.	____	____	____	____	___	
2.	____	____	____	____	___	

Refusals:

	Date/time	Spoke with	ID	Comments
1st:	____	____	___	
2nd:	____	____	___	

Call Disposition Codes

- 01 - Completed interview.
- 02 - Refused interview.
- 03 - Non-working number.
- 04 - No answer (multiple times).
- 05 - Business phone.
- 06 - No eligible respondent at this number.
- 07 - No eligible respondent could be reached during time period.
- 08 - Language barrier prevented completion of interview.
- 09 - Interview terminated within questionnaire.
- 10 - Line busy (multiple tries).
- 11 - Selected respondent unable to respond because of physical or mental impairment.

Edited by: ____________

Date: __/__/__

Final Disposition of Telephone Call: ☐☐ (26-27)

Our study requires that we interview only one person who lives in your household.
How many members of your household, including yourself, are 18 years of age or older? ☐ (28)

If "1" → Page 3

How many are men and how many are women? Men ☐ (29) Women ☐ (30)

Who is the oldest man who presently lives in this household?
Who is the next oldest man who presently lives in this household?
Etc.

Who is the oldest woman who presently lives in this household?
Who is the next oldest woman who presently lives in this household?
Etc.

Suffix: ___ ___ ___ ___

Name or Relationship	*Last digit of phone number*										
	0	1	2	3	4	5	6	7	8	9	
1.	1	1	1	1	1	1	1	1	1	1	1.
2.	2	1	2	1	2	1	2	1	2	1	2.
3.	3	1	2	3	1	2	3	1	2	X	3.
4.	1	2	3	4	1	2	3	4	X	X	4.
5.	2	3	4	5	1	2	3	4	5	1	5.
6.	5	6	1	2	3	4	X	X	X	X	6.
7.	2	3	4	5	6	7	1	X	X	X	7.
8.	8	1	2	3	4	5	6	7	X	X	8.

The person in your household that I need to speak with is ______________________________.

If "you" → Page 3

To correct respondent → Hello. I'm ______________________________
calling for the ______________________________. I'm a member of a special research team. We're doing a study of ________________ residents regarding their health practices and day-to-day living habits. You have been randomly chosen to be included in the study from among the adult members of your household.

The interview will only take a short time, and all the information obtained in this study will be **confidential.** First, I'd like to begin by asking you about using seat belts. . . .

SECTION A: SEAT BELTS

1. How often do you use seat belts when you drive or ride in a car?

Would you say: *PLEASE READ* (31)

	a. Always	1
	b. Nearly Always	2
	c. Sometimes	3
	d. Seldom **OR**	4
	e. Never	5
DO NOT READ THESE RESPONSES	Don't know/Not sure	7
	Never drive or ride in a car	8
	Refused	9

SECTION B: HYPERTENSION

These next questions are about hypertension or high blood pressure:

2. Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure? (32)

	a. No *GO TO SECTION C (p.5)*	1
PROBE FOR DOCTOR, NURSE OR OTHER HEALTH PROFESSIONAL	b. Yes, by a doctor	2
	c. Yes, by a nurse	3
	d. Yes, by other health professional	4
	Don't know/Not sure *GO TO SECTION C (p.5)*	7
	Refused *GO TO SECTION C (p.5)*	9

3. Have you been told on more than one occasion that your blood pressure was high, or have you been told this only once? (33)

a.	More than once	1
b.	Only once	2
	Don't know/Not sure	7
	Refused	9

4. Is any medicine currently prescribed for your high blood pressure? (34)

a.	Yes	1
b.	No ***GO TO SECTION C (p.5)***	2
	Don't know/Not sure ***GO TO SECTION C (p.5)***	7
	Refused ***GO TO SECTION C (p.5)***	9

5. Are you currently taking medicine for your high blood pressure? (35)

PROBE FOR "All or most of the time" OR "Only occasionally" IF NECESSARY.

IF ANSWER IS "Yes", USE "Yes, all or most of the time."

a.	Yes, all or most of the time	1
b.	Yes, only occasionally	2
c.	No	3
	Don't know/Not sure	7
	Refused	9

SECTION C: EXERCISE

The next few questions are about exercise, recreation, or physical activities other than your regular job duties.

6. During the past month, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise? (36)

a.	Yes	1
b.	No *GO TO SECTION D (p.8)*	2
	Don't know/Not sure *GO TO SECTION D (p.8)*	7
	Refused *GO TO SECTION D (p.8)*	9

7. What type of physical activity or exercise did you spend the most time doing during the past month? (37-38)

a.	Activity *(specify)*: ______________________ *See Coding List A*	_	_
	Refused *GO TO Q 11 (p.6)*	9	9

ASK QUESTION 8 ONLY IF ANSWER TO QUESTION 7 IS RUNNING, JOGGING, WALKING, OR SWIMMING. ALL OTHERS, GO TO QUESTION 9 (p.6).

8. How far did you usually walk/run/jog/swim? (39-41)

SEE CODING LIST B IF RESPONSE IS NOT IN MILES AND TENTHS

a.	Miles and tenths	_	_	._
	Don't know/Not sure	7	7	7
	Refused	9	9	9

9. How many times per week or per month did you take part in this activity during the past month? (42-44)

a.	Times per week	1 _ _
b.	Times per month	2 _ _
	Don't know/Not sure	7 7 7
	Refused	9 9 9

10. And when you took part in this activity, for how many minutes or hours did you usually keep at it? (45-47)

a.	Hours & Minutes	_ :_ _
	Don't know/Not sure	7 7 7
	Refused	9 9 9

11. Was there another physical activity or exercise that you participated in during the last month? (48)

a.	Yes	1
b.	No *GO TO SECTION D (p.8)*	2
	Don't know/Not sure *GO TO SECTION D (p.8)*	7
	Refused *GO TO SECTION D (p.8)*	9

12. What other type of physical activity gave you the next most exercise during the past month? (49-50)

a.	Activity *(specify)*: ______________________ *See Coding List A*	_ _
	Refused *GO TO SECTION D (p.8)*	9 9

ASK QUESTION 13 ONLY IF ANSWER TO QUESTION 12 IS RUNNING, JOGGING, WALKING, OR SWIMMING, ALL OTHERS GO TO QUESTION 14.

13. How far did you usually walk/run/jog/swim? (51-53)

SEE CODING LIST B IF RESPONSE IS NOT IN MILES AND TENTHS

a.	Miles and tenths	__	__	.__
	Don't know/Not sure	7	7	7
	Refused	9	9	9

14. How many times per week or per month did you take part in this activity? (54-56)

a.	Times per week	1	__	__
b.	Times per month	2	__	__
	Don't know/Not sure	7	7	7
	Refused	9	9	9

15. And when you took part in this activity, for how many minutes or hours did you usually keep at it? (57-59)

a.	Hours & minutes	__	:__	__
	Don't know/Not sure	7	7	7
	Refused	9	9	9

SECTION D: TOBACCO USE

Now I'd like to ask you a few questions about cigarette smoking.

16. Have you smoked at least 100 cigarettes in your entire life? (60)

100 CIGARETTES = 5 PACKS

a. Yes 1
b. No *GO TO SECTION E (p.10)* 2
Don't know/Not sure *GO TO SECTION E (p.10)* 7
Refused *GO TO SECTION E (p.10)* 9

17. Do you smoke cigarettes now? (61)

a. Yes 1
b. No *GO TO Q 22 (p.9)* 2
Refused *GO TO SECTION E (p.10)* 9

18. On the average, about how many cigarettes a day do you now smoke? (62-63)

1 PACK = 20 CIGARETTES

a. Number of cigarettes . . . . _ _
b. Don't smoke regularly 8 8
Refused 9 9

19. Have you ever made a serious attempt to stop smoking cigarettes? (64)

a. Yes 1
b. No *GO TO SECTION E (p.10).* 2
Refused *GO TO SECTION E (p.10)* 9

20. When was the start of your most recent quit attempt? (65)

a.	Past week	1
b.	Past 2 weeks	2
c.	Past month	3
d.	Past 6 months	4
e.	Past year	5
f.	More than 1 year ago	6
	Don't know/Not sure	7
	Refused	9

21. How long did you actually stay off cigarettes that time? (66)

a.	Less than one day	1
b.	One to 6 days	2
c.	Seven days to less than 3 months	3
d.	Three months to less than 6 months	4
e.	Six months to less than 1 year	5
f.	1 or more years	6
	Don't know/Not sure	7
	Refused	9

INTERVIEWER GO TO SECTION E (p.10)

22. About how long has it been since you last smoked cigarettes regularly? (67)

a.	Less than 1 month	1
b.	One month, but less than 3 months	2
c.	Three months, but less than 6 months	3
d.	Six months, but less than 1 year	4
e.	One or more years	5
	Don't know/Not sure	7
	Refused	9

SECTION E: ALCOHOL CONSUMPTION

These next few questions are about the use of beer, wine, wine coolers, cocktails, or liquor, such as vodka, gin, rum, or whiskey—all kinds of alcoholic beverages that people drink at meals, special occasions, or when just relaxing.

23. Have you had any beer, wine, wine coolers, cocktails, or liquor during the past month, that is, since ______________________? (68)

a. Yes	1
b. No *GO TO SECTION F (p.12)*	2
Refused *GO TO SECTION F (p.12)*	9

24. During the past month, how many days per week or per month did you drink any alcoholic beverages, on the average? (69-71)

a. Days per week	1	_	_
b. Days per month	2	_	_
Don't know/Not sure *GO TO Q 26 (p.11)*.	7	7	7
Refused *GO TO Q 26 (p.11)*	9	9	9

25. A drink is 1 can or bottle of beer, 1 glass of wine, 1 can or bottle of wine cooler, 1 cocktail, or 1 shot of liquor. On the days when you drank, about how many drinks did you drink on the average? (72-73)

a. Number of drinks	_	_
Don't know/Not sure	7	7
Refused	9	9

26. Considering all types of alcoholic beverages, that is beer, wine, wine coolers, cocktails, and liquor, as drinks, how many times during the past month did you have 5 or more drinks on an occasion? (74-75)

a. Number of times	. . . .	__ __
b. None	. . . .	8 8
Don't know/Not sure	. . . .	7 7
Refused	. . . .	9 9

27. And during the past month, how many times have you driven when you've had perhaps too much to drink? (76-77)

a. Number of times	. . . .	__ __
b. None	. . . .	8 8
Don't know/Not sure	. . . .	7 7
Refused	. . . .	9 9

SECTION F: PREVENTIVE HEALTH PRACTICES

Some people visit a doctor for a routine checkup, even though they are feeling well and have not been sick.

28. About how long has it been since you last visited a doctor for a routine checkup?

Was it: *PLEASE READ* (78)

a.	Within the past year (0 TO 12 MONTHS AGO)	1
b.	Within the past two years (13 TO 24 MONTHS AGO)	2
c.	Within the past five years (25 TO 60 MONTHS AGO) OR	3
d.	More than five years ago (61+ MONTHS AGO)	4
	Don't know/Not sure *GO TO Q 30 (p.13)*	7
	Never, *GO TO Q 30 (p.13)*	8
	Refused *GO TO Q 30 (p.13)*	9

29. What type of doctor did you see for your last routine check-up?

Was it: *PLEASE READ* (79)

a.	Family or General Practitioner	1
b.	Internist	2
c.	Specialist such as heart, lung, or stomach specialist	3
d.	Other	4
(ASK FOR WOMEN ONLY)		
e.	Obstetrician/Gynecologist	5
	Don't know/Not sure	7
	Refused	9

These next questions are about blood cholesterol, which is a fatty substance found in the blood.

30. Have you ever had your blood cholesterol checked? (80)

a. Yes	1
b. No *GO TO Q 37 (p.15)*	2
Don't know/Not sure *GO TO Q 37 (p.15)*	7
Refused *GO TO Q 37 (p.15)*	9

31. About how long has it been since you last had your blood cholesterol checked?

Was it: *PLEASE READ* (81)

a. Within the past year (0 TO 12 MONTHS AGO)	1
b. Within the past two years (13 TO 24 MONTHS AGO)	2
c. Within the past five years (25 TO 60 MONTHS AGO) OR	3
d. More than five years ago (61+ MONTHS AGO)	4
Don't know/Not sure	7
Refused	9

32. Have you ever been told your blood cholesterol level, in numbers? (82)

a. Yes 1

b. No *GO TO Q 34* 2

Don't know/Not sure *GO TO Q 34* 7

Refused *GO TO Q 34* 9

33. What is your blood cholesterol level? (83-85)

Record the number . . . . _ _ _

Don't know/Not sure 7 7 7

Refused 9 9 9

34. Have you ever been told by a doctor or other health professional that your blood cholesterol is high? (86)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

35. Are you now under the advice of a doctor to reduce your blood cholesterol or blood fat level? (87)

a. Yes 1

b. No *GO TO Q 37 (p.15)* 2

Don't know/Not sure *GO TO Q 37 (p.15)* 7

Refused *GO TO Q 37 (p.15)* 9

36. Did the doctor:

36a. —prescribe a medication to lower your blood cholesterol? (88)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

36b. —provide you with a low fat or low cholesterol diet? (89)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

36c. —refer you to a dietitian, nutritionist, or nurse to help you reduce the fat or cholesterol in your diet? (90)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

37. Next, I'd like to ask you about diabetes, sometimes called sugar diabetes. Have you ever been told by a doctor that you have diabetes? (91)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

SECTION G: DEMOGRAPHICS

These next few questions ask for a little more information about yourself.

38. How old were you on your last birthday? (92-93)

Code age in years	__ __
Don't know/Not sure	0 7
Refused	0 9

39. What is your race?
Would you say: *PLEASE READ* (94)

a. White	1
b. Black	2
c. Asian, Pacific Islander	3
d. Aleutian, Eskimo, or American Indian	4
e. Other: *(specify)* ______________________	.5
Don't know/Not sure	7
Refused	9

40. Are you of Hispanic origin such as Mexican American, Latin American, Puerto Rican, or Cuban? (95)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

41. What is the highest grade or year of school you completed?

READ ONLY IF NECESSARY (96)

a.	Eighth grade or less	1
b.	Some high school	2
c.	High school grad or GED certificate	3
d.	Some technical school	4
e.	Technical school graduate	5
f.	Some college	6
g.	College graduate	7
h.	Post grad or professional degree	8
	Refused	9

42. Are you currently: *PLEASE READ* (97)

a.	Employed for wages	1
b.	Self employed	2
c.	Out of work for more than 1 year	3
d.	Out of work for less than 1 year	4
e.	Homemaker	5
f.	Student OR	6
g.	Retired	7
	Refused	9

43. And are you: PLEASE READ (98)

a.	Married	1
b.	Divorced	2
c.	Widowed	3
d.	Separated	4
e.	Never been married OR	5
f.	A member of an unmarried couple	6
	Refused	9

44. Which of the following categories best describes your annual household income from all sources? PLEASE READ (99)

a.	Less than $10,000	1
b.	$10 to $15,000	2
c.	$15 to $20,000	3
e.	$20 to $25,000	4
e.	$25 to $35,000	5
f.	$35 to $50,000 OR	6
g.	Over $50,000	8
	Don't know/Not sure	7
	Refused	9

45. About how much do you weigh without shoes? (100-102)

a.	Weight	__ __ __ Pounds
	Don't know/Not sure	7 7 7
	Refused	9 9 9

46. About how tall are you without shoes? (103-105)

a.	Height	__/ __ __ Ft./ inches
	Don't know/Not sure	7 7 7
	Refused	9 9 9

47. *INTERVIEWER: INDICATE SEX OF RESPONDENT. ASK IF NECESSARY* (106)

a.	Male, *GO TO SECTION I (p.24)*	1
b.	Female	2

SECTION H: WOMEN'S HEALTH

These next questions are about mammograms, which are x-ray tests of the breast to look for cancer.

48. Have you ever had a mammogram? (107)

a. Yes	1
b. No *GO TO Q 50b (bottom of p.21)*	2
Don't know/Not sure *GO TO Q 53 (p.22)*	7
Refused *GO TO Q 53 (p.22)*	9

49. About how long has it been since you had your last mammogram?

Was it: *PLEASE READ* (108)

a. Within the past year *GO TO Q 51 (p.21)* (0 TO 12 MONTHS AGO)	1
b. Within the past two years (13 TO 24 MONTHS AGO)	2
c. Within the past five years (25 TO 60 MONTHS AGO) **OR**	3
d. More than five years ago (61+ MONTHS AGO)	4
Don't know/Not sure	7
Refused	9

50a. What is the **most important reason** that you did not have a mammogram in the last year?

DO NOT READ LIST. RECORD ONLY ONE ANSWER (109)

a. Not recommended by doctor / Doctor never said it was needed	1
b. Not needed / Not necessary	2
c. Never heard of mammogram	3
d. Cost	4
e. No insurance to pay for it	5
f. Other	6
Don't know/Not sure	7
Refused	9

51. Was your last mammogram done as part of a routine checkup, because of a breast problem, or because you've already had breast cancer? (110)

a. Routine checkup	1
b. Breast problem	2
c. Had breast cancer	3
Don't know/Not sure	7
Refused	9

52. Whose idea was it for you to have this last mammogram - was it your idea, your doctor's idea, or someone else's idea?
PROBE FOR THE MOST INFLUENTIAL. RECORD ONLY ONE RESPONSE. (111)

a. Respondent's idea	1
b. Doctor's idea	2
c. Someone else's idea	3
Don't know/Not sure	7
Refused	9

INTERVIEWER : GO TO Q 53, PAGE 22

50b. What is the **most important reason** that you never had a mammogram?
DO NOT READ LIST. RECORD ONLY ONE ANSWER (109)

a. Not recommended by doctor / doctor never said it was needed	1
b. Not needed / not necessary	2
c. Never heard of mammogram	3
d. Cost	4
e. No insurance to pay for it	5
f. Other	6
Don't know/Not sure	7
Refused	9

The next questions are about breast physical examination, which is when the breast is felt for lumps by a doctor or medical assistant.

53. Have you ever had a breast physical exam by a doctor or a medical assistant? (112)

a. Yes	1
b. No *GO TO Q 56 (p. 23)*	2
Don't know/Not sure *GO TO Q 56 (p.23)*	7
Refused *GO TO Q 56 (p.23)*	9

54. About how long has it been since your last breast physical exam? (113)
Was it:

a. Within the past year (0 to 12 months ago)	1
b. Within the past two years (13 to 24 months ago)	2
c. Within the past five years (25 to 60 months ago)	3
d. More than five years ago (61+ months)	4
Don't know/Not sure	7
Refused	9

55. Was your last breast physical exam done as part of a routine checkup, because of a breast problem, or because you've already had breast cancer? (114)

a. Routine checkup	1
b. Breast problem	2
c. Had breast cancer	3
Don't know/Not sure	7
Refused	9

INTERVIEWER: ASK THESE TWO QUESTIONS ONLY OF FEMALES BETWEEN 18 AND 45 YEARS OF AGE,

OTHERWISE, GO TO SECTION I (p.24).

56. To your knowledge, are you now pregnant? **(115)**

a. Yes 1

b. No ***GO TO SECTION I (p.24)*** 2

Don't know/Not sure ***GO TO SECTION I (p.24)*** 7

Refused ***GO TO SECTION I (p.24)*** 9

57. During what month is your baby due? **(116-117)**

Code Months

Jan	01
Feb	02
Mar	03
Apr	04
May	05
Jun	06
Jul	07
Aug	08
Sep	09
Oct	10
Nov	11
Dec	12

Code month . . . . __ __

Don't know/Not sure 7 7

Refused 9 9

SECTION I: AIDS

These next few questions are to determine your beliefs and opinions about the national health problem of AIDS.

58. Have you ever heard the AIDS virus called HIV? (118)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

59. To your knowledge, are there drugs available which can lengthen the life of a person infected with the AIDS virus? (119)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

60. Do you think a person who is infected with the AIDS virus can look and feel well and healthy? (120)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

61. There has been a lot of talk about how you can and cannot get infected with the AIDS virus. Do you think you can get infected from:

	Yes	No	DK/NS	Ref	
a. Giving blood	1	2	7	9	(121)
b. Mosquitoes or other insects	1	2	7	9	(122)

62. Do you have a child or children in kindergarten through eighth grade? (123)

a. Yes	1
b. No *GO TO Q 65*	2
Don't know/Not sure *GO TO Q 65*	7
Refused *GO TO Q 65*	9

63. Would you allow your child to be in the same classroom with a child who is infected with the AIDS virus? (124)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

64. At what grade do you think your child should begin AIDS education in school? (125-126)

Code grade	—	—
Never	8	8
Don't know/Not sure	7	7
Refused	9	9

65. Would you eat in a restaurant where the cook is infected with the AIDS virus? (127)

a.. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

66. Would you be willing to work with a person who is infected with the AIDS virus? **(128)**

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

67. Where could you go to be tested for the AIDS virus infection? **(129-130)**
PROBE FOR OTHER PLACES IF ONLY ONE RESPONSE IS GIVEN

a. *Facility code* . . . . __ __

(131-132)

b. Where else could you go? . . . . __ __

PLEASE DO NOT READ LIST

a. Private doctor, HMO	01
b. Blood bank, plasma center, Red Cross	02
c. Health department	03
d. AIDS clinic, AIDS testing site	04
e. Hospital, emergency room	05
f. Family planning clinic	06
g. STD clinic	07
h. Community health clinic, primary care clinic	08
i. Company or industry clinic	09
j. Military induction or examination	10
k. Other	87
l. No place	88
Don't know/Not sure	77
Refused	99

68. Some people use condoms to keep from getting the AIDS virus through sexual activity. How effective do you think using a condom is in preventing getting the AIDS virus through sexual activity?

Would you say: *PLEASE READ* (133)

	a. Very effective	1
	b. Somewhat effective **OR**	2
	c. Not at all effective	3
DO NOT READ THESE RESPONSES	Don't know how effective	4
	Don't know method	5
	Refused	9

---

69. How many telephone numbers will reach this household, including the number I used today?

DIFFERENTIATE BETWEEN TELEPHONE NUMBERS AND TELEPHONE SETS IF NECESSARY.
INCLUDE ALL TELEPHONE NUMBERS THAT CAN REACH HOUSEHOLD (134)

a. Total telephone numbers . . . . ___

CLOSING STATEMENT

That's my last question. Let me emphasize that your answers cannot be identified with your name. Everyone's answers will be combined to give us information about the health practices of people in this state. Thank you very much for your time and cooperation.

MODULE 3: CERVICAL CANCER SCREENING

PLEASE NOTE: Ask all females, otherwise go to next module

These next questions are about certain kinds of medical tests and examinations.

1. Have you ever heard of a Pap smear test? (140)

a. Yes	1
b. No *GO TO Q 4*	2
Don't know/Not sure *GO TO Q 4*	7
Refused *GO TO Q 4*	9

2. Have you ever had a Pap smear? (141)

a. Yes	1
b. No *GO TO Q 4*	2
Don't know/Not sure *GO TO Q 4*	7
Refused *GO TO Q 4*	9

3. When did you have your last Pap smear?
Was it: *PLEASE READ* (142)

a. Within the past year *(0 TO 12 MONTHS AGO)*	1
b. Within the past two years *(13 TO 24 MONTHS AGO)*	2
c. Within the past five years *(25 TO 60 MONTHS AGO)* OR	3
d. More than five years ago *(61+ MONTHS AGO)*	4
Don't know/Not sure	7
Refused	9

4. Have you had a hysterectomy? (143)
PLEASE NOTE: A hysterectomy is "An operation to remove the uterus."

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

MODULE 5: INJURY CONTROL AND CHILD SAFETY

1. Is there a working smoke detector in your household? (153)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

2. In the past 12 months have you (or has anyone in your household) used a thermometer to test the temperature of the hot water? (154)

a. Yes	1
b. No	2
Don't know/Not sure	7
Refused	9

3. What is the age of the youngest child in your household? (155-156)

a. Age in years *If over 10, GO TO NEXT MODULE*	__	__
b. Age is less than one year	8	9
c. No children in household *GO TO NEXT MODULE*	8	8
Don't know/Not sure *GO TO NEXT MODULE*	7	7
Refused *GO TO NEXT MODULE*	9	9

4. Do you have the telephone number for a Poison Control Center in your area? (157)

a.	Yes	1
b.	No	2
	Don't know/Not sure	7
	Refused	9

5. There is a medication called IPECAC *(ip' i kak)* SYRUP which is sometimes taken to cause vomiting after something poisonous is swallowed. Do you now have any Ipecac Syrup in your household? (158)

a.	Yes	1
b.	No	2
	Don't know/Not sure	7
	Refused	9

6. When riding in a car, how often is the youngest child buckled in a car safety seat or seat belt?
Would you say: *PLEASE READ* (159)

a.	All the time	1
b.	Most of the time	2
c.	Sometimes	3
d.	Rarely **OR**	4
e.	Never	5
	Don't know/Not sure	7
	Refused	9

MODULE 6: WEIGHT CONTROL PRACTICES

"Now I would like to ask you about some of the things you may be currently doing to try to lose weight, or keep from gaining weight."

1. Are you now trying to lose weight? (160)

a. Yes	1
b. No *GO TO Q 5*	2
c. No, trying to gain weight *GO TO Q 12*	3
Don't know/Not sure *GO TO Q 5*	7
Refused *GO TO Q 5*	9

2. About how long ago did you begin your current attempt to lose weight? (161-163)

a. Days	1	__	__
b. Weeks	2	__	__
c. Months	3	__	__
d. Years	4	__	__
e. Always trying to lose weight	5	5	5
Don't know/Not sure	7	7	7
Refused	9	9	9

3. About how much did you weigh when you began your current attempt to lose weight? (164-166)

Record weight	__	__ Pounds	__
Don't know/Not sure	7	7	7
Refused	9	9	9

4. How much would you like to weigh? (167-169)

Record weight GO TO Q 6	___ ___ ___ Pounds
Don't know/Not sure GO TO Q 6	7 7 7
Refused GO TO Q 6	9 9 9

5. Are you now trying to maintain your current weight, that is to keep from gaining weight? (170)

a. Yes	1
b. No GO TO Q 11	2
Don't know/Not sure GO TO Q 11	7
Refused GO TO Q 11	9

6. Are you eating fewer calories to lose weight, or to keep from gaining weight? (171)

a. Yes	1
b. No GO TO Q 9	2
Don't know/Not sure GO TO Q 9	7
Refused GO TO Q 9	9

7. Some people count calories. If you are counting calories, about how many calories are you eating per day? (172-175)

a. *Record number of calories*	___ ___ ___ ___
b. Don't count calories GO TO Q 9	7 7 7 7
Refused GO TO Q 9	9 9 9 9

INTERVIEWER: If respondent gives a number of 10,000 or greater, then enter 9997.

8. About how long have you been eating this many calories per day? (176-178)

a.	Days	1 __ __
b.	Weeks	2 __ __
c.	Months	3 __ __
d.	Years	4 __ __
	Don't know/Not sure	7 7 7
	Refused	9 9 9

9. Are you using physical activity or exercise to lose weight or to keep from gaining weight? (179)

a.	Yes	1
b.	No	2
	Don't know/Not sure	7
	Refused	9

10. Are you now doing any of the following to lose weight or to keep from gaining weight?

		Yes	No	DK/NS	Ref	
a.	Taking diet pills to decrease your appetite?	1	2	7	9	(180)
b.	Taking special products such as canned or powdered supplements?	1	2	7	9	(181)
c.	Fasting for 24 hours or longer as part of your diet?	1	2	7	9	(182)
d.	Participating in an organized weight control program, such as Weight Watchers, TOPS, or Nutri-Systems?	1	2	7	9	(183)
e.	Causing yourself to vomit after you eat?	1	2	7	9	(184)

11. Have you been advised by a doctor or other health professional to reduce your weight? (185)

INTERVIEWER: PROBE FOR DOCTOR, NUTRITIONIST OR OTHER HEALTH PROFESSIONAL

a.	Yes, by a Doctor	1
b.	Yes, by a Nurse or Physician's Assistant	2
c.	Yes, by a Nutritionist or Dietitian	3
d.	Yes, by other Health Professional	4
e.	No	5
	Don't know/Not sure	7
	Refused	9

12. Do you now consider yourself to be overweight, underweight, or about average? (186)

a.	Overweight	1
b.	Underweight	2
c.	About average	3
	Don't know/Not sure	7
	Refused	9

MODULE 8: DIETARY FAT

These next questions are about the foods you usually eat or drink. Please tell me how often you eat or drink each one; for example, twice a week, three times a month, and so forth. Remember, I am only interested in the foods YOU eat. Include all foods you eat, both at home and away from home.

1. How often do you eat hot dogs or lunch meats such as ham or other cold cuts? (198-200)

a.	Per Day	1	__	__
b.	Per Week	2	__	__
c.	Per Month	3	__	__
d.	Per Year	4	__	__
e.	Never	5	5	5
	Don't know/Not sure	7	7	7
	Refused	9	9	9

2. How often do you eat bacon or sausage? (201-203)

a.	Per Day	1	__	__
b.	Per Week	2	__	__
c.	Per Month	3	__	__
d.	Per Year	4	__	__
e.	Never	5	5	5
	Don't know/Not sure	7	7	7
	Refused	9	9	9

3. How often do you eat pork other than ham, bacon, or sausage? (204-206)

a. Per Day . . . . 1 ___ ___

b. Per Week . . . . 2 ___ ___

c. Per Month . . . . 3 ___ ___

d. Per Year . . . . 4 ___ ___

e. Never 5 5 5

Don't know/Not sure 7 7 7

Refused 9 9 9

4. How often do you eat hamburgers, cheeseburgers or meatloaf? (207-209)

a. Per Day . . . . 1 ___ ___

b. Per Week . . . . 2 ___ ___

c. Per Month . . . . 3 ___ ___

d. Per Year . . . . 4 ___ ___

e. Never 5 5 5

Don't know/Not sure 7 7 7

Refused 9 9 9

5. How often do you eat beef other than hamburger, cheeseburger, or meatloaf? (210-212)

a. Per Day . . . . 1 ___ ___

b. Per Week . . . . 2 ___ ___

c. Per Month . . . . 3 ___ ___

d. Per Year . . . . 4 ___ ___

e. Never 5 5 5

Don't know/Not sure 7 7 7

Refused 9 9 9

6. How often do you eat fried chicken? (213-215)

a. Per Day . . . . 1 ___ ___
b. Per Week . . . . 2 ___ ___
c. Per Month . . . . 3 ___ ___
d. Per Year . . . . 4 ___ ___
e. Never 5 5 5
Don't know/Not sure 7 7 7
Refused 9 9 9

7. How often do you eat french fries or fried potatoes? (216-218)

a. Per Day . . . . 1 ___ ___
b. Per Week . . . . 2 ___ ___
c. Per Month . . . . 3 ___ ___
d. Per Year . . . . 4 ___ ___
e. Never 5 5 5
Don't know/Not sure 7 7 7
Refused 9 9 9

8. How often do you eat cheese or cheese spreads, not including cottage cheese? (219-221)

INTERVIEWERS: Include cheese used as an ingredient, e.g., on pizza.

a. Per Day . . . . 1 ___ ___
b. Per Week . . . . 2 ___ ___
c. Per Month . . . . 3 ___ ___
d. Per Year . . . . 4 ___ ___
e. Never 5 5 5
Don't know/Not sure 7 7 7
Refused 9 9 9

9. How often do you eat doughnuts, cookies, cake, pastry, or pies? (222-224)

a. Per Day . . . . 1 ___ ___

b. Per Week . . . . 2 ___ ___

c. Per Month . . . . 3 ___ ___

d. Per Year . . . . 4 ___ ___

e. Never 5 5 5

Don't know/Not sure 7 7 7

Refused 9 9 9

10. How often do you usually eat snacks, such as chips or popcorn? (225-227)

a. Per Day . . . . 1 ___ ___

b. Per Week . . . . 2 ___ ___

c. Per Month . . . . 3 ___ ___

d. Per Year . . . . 4 ___ ___

e. Never 5 5 5

Don't know/Not sure 7 7 7

Refused 9 9 9

11. How often do you usually add butter or margarine to bread, rolls or vegetables? (228-230)

a. Per Day . . . . 1 ___ ___

b. Per Week . . . . 2 ___ ___

c. Per Month . . . . 3 ___ ___

d. Per Year . . . . 4 ___ ___

e. Never 5 5 5

Don't know/Not sure 7 7 7

Refused 9 9 9

12. How many eggs do you usually eat? (231-233)

a. Per Day . . . . 1 ___ ___
b. Per Week . . . . 2 ___ ___
c. Per Month . . . . 3 ___ ___
d. Per Year . . . . 4 ___ ___
e. None 5 5 5
Don't know/Not sure 7 7 7
Refused 9 9 9

13. How many glasses (8 oz) of whole milk do you usually drink? Remember to include drinks made with whole milk or milk on cereal. Do not include low fat milk, such as skim milk or 2% milk. (234-236)

a. Per Day . . . . 1 ___ ___
b. Per Week . . . . 2 ___ ___
c. Per Month . . . . 3 ___ ___
d. Per Year . . . . 4 ___ ___
e. None 5 5 5
Don't know/Not sure 7 7 7
Refused 9 9 9

MODULE 9: FRUITS AND VEGETABLES

These next questions are about the foods you usually eat or drink. Please tell me how often you eat or drink each one, for example, twice a week, three times a month and so forth. Remember, I am only interested in the foods YOU eat. Include all foods you eat, both at home and away from home.

1. How often do you drink fruit juices such as orange, grapefruit, or tomato? (237-239)

a. Per Day	1	___	___
b. Per Week	2	___	___
c. Per Month	3	___	___
d. Per Year	4	___	___
e. Never	5	5	5
Don't know/Not sure	7	7	7
Refused	9	9	9

2. Not counting juice, how often do you eat fruit? (240-242)

a. Per Day	1	___	___
b. Per Week	2	___	___
c. Per Month	3	___	___
d. Per Year	4	___	___
e. Never	5	5	5
Don't know/Not sure	7	7	7
Refused	9	9	9

3. How often do you eat green salad? (243-245)

a. Per Day	1	___	___
b. Per Week	2	___	___
c. Per Month	3	___	___
d. Per Year	4	___	___
e. Never	5	5	5
Don't know/Not sure	7	7	7
Refused	9	9	9

4. How often do you eat potatoes (not including french fries, fried potatoes or potato chips)? (246-248)

a.	Per Day	1	___	___
b.	Per Week	2	___	___
c.	Per Month	3	___	___
d.	Per Year	4	___	___
e.	Never	5	5	5
	Don't know/Not sure	7	7	7
	Refused	9	9	9

5. How often do you eat carrots? (249-251)

a.	Per Day	1	___	___
b.	Per Week	2	___	___
c.	Per Month	3	___	___
d.	Per Year	4	___	___
e.	Never	5	5	5
	Don't know/Not sure	7	7	7
	Refused	9	9	9

6. Not counting carrots, potatoes or salad, how many **servings** of vegetables do you usually eat? (For example, a serving of vegetables at both lunch and dinner would be two servings.) (252-254)

a.	Per Day	1	___	___
b.	Per Week	2	___	___
c.	Per Month	3	___	___
d.	Per Year	4	___	___
e.	Never	5	5	5
	Don't know/Not sure	7	7	7
	Refused	9	9	9

OCCUPATION AND INDUSTRY

What is your usual occupation, that is, the job you have worked for most of your life?

(specify)_________________________ code ___ ___

What type of industry does this job involve?

(specify)_________________________ code ___ ___

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